OTTERPOOL PARK

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APPLICATION DOCUMENT | **3.13**

HEALTH IMPACT ASSESSMENT

ARCADIS

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APPLICATION CONTENTS

ARCADIS Design & Consultancy for natural and built assets

OTTERPOOL PARK
HEALTH IMPACT ASSESSMENT

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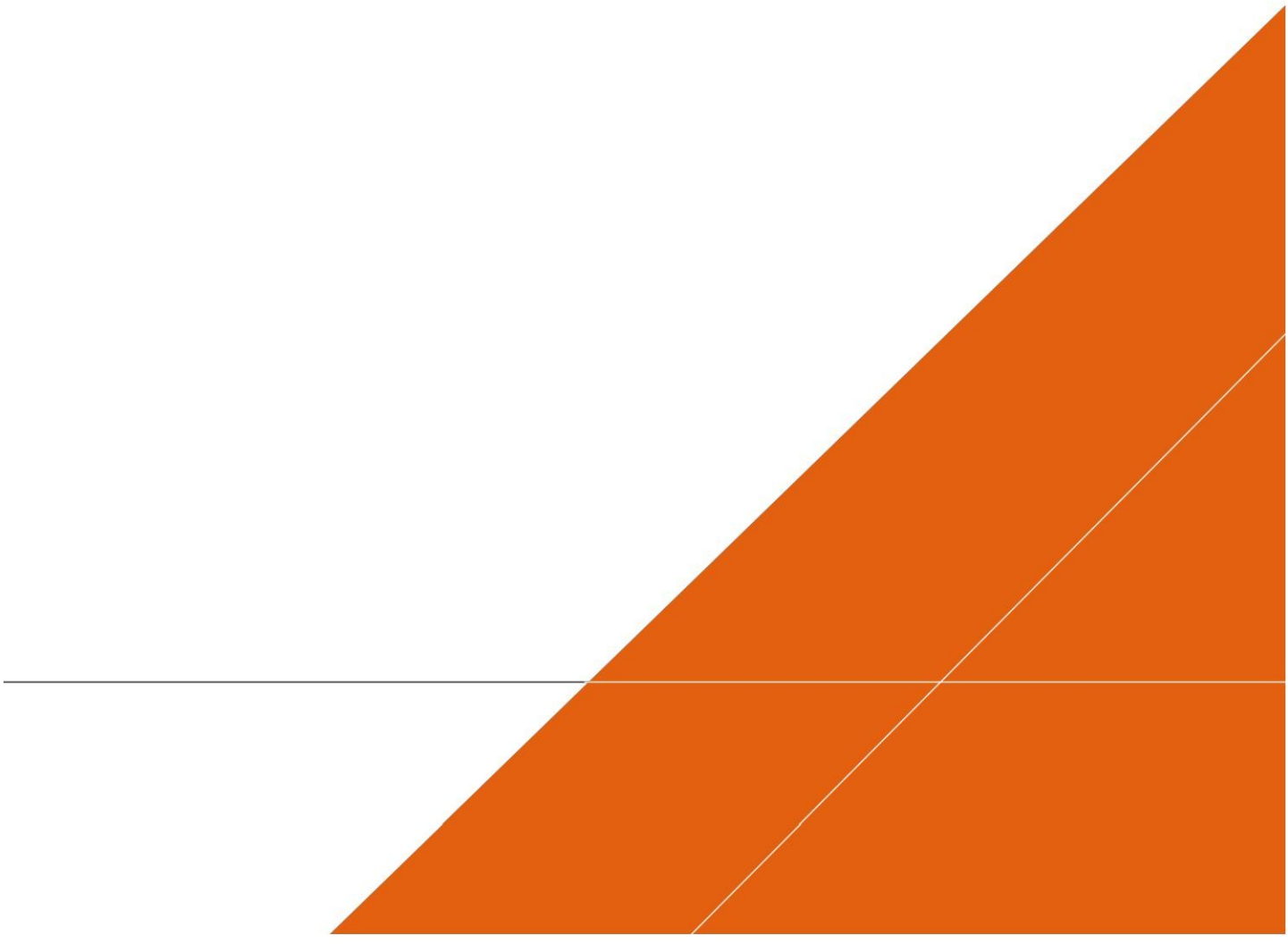

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APPENDIX A

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1 Introduction

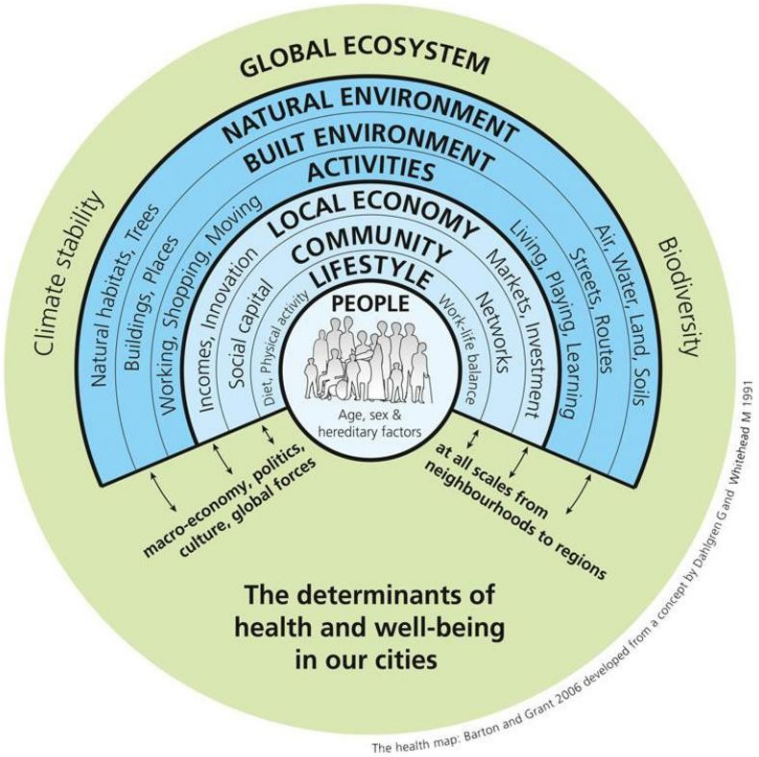
1.1 Overview

1.1.1 This document comprises the Health Impact Assessment (HIA) required to support the Outline Planning Application (OPA) for Otterpool Park. Arcadis Consulting (UK) Ltd ('Arcadis') has prepared this **HIA** on behalf of Folkestone & Hythe District Council and Cozumel Estates (the 'Applicant'). The document is in support of an outline planning application for the development of a new garden settlement accommodating up to 8,500 homes (use class C2 and C3) and use class D1, D2, A1, A2, A3, A4, B1a, B1b, B2, C1 development with related highways, green and blue infrastructure (access, appearance, landscaping, layout and scale matters to be reserved).

1.2 Purpose of Health Impact Assessment

1.2.1 The World Health Organisation (WHO) defines health as a 'state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. The range of personal, social, economic and environmental factors that influence health status are known as health determinants and include the physical environment, income levels, employment, education, social support and housing. Determinants of health and well-being are summarised in Figure 1-2, based on the diagram produced by Dahlgren and Whitehead (1991) and amended by Barton and Grant (2006).

Figure 2-2 Determinants of Health and Well-Being



Source: Dahlgren and Whitehead (1991) and amended by Barton and Grant (2006)

1.2.2 Key determinants of health can be categorised as follows:

- pre-determined factors such as age, genetic make-up and gender are fixed and strongly influence a person's health status;
- social and economic circumstances such as poverty, unemployment and other forms of social exclusion strongly influence health, and improving them can significantly improve health;

- how the environment in which people live, work and play are provided and managed (for example air quality, aspects of the built environment) can either damage health or provide opportunities for health improvement;
- lifestyle factors can have significant impacts on health; and
- the accessibility of services such as the National Health Service (NHS), education, social services, transport and leisure facilities influence the health of the population.

1.2.3 The purpose of an HIA is to identify changes to health determinants as a result of a project or programme, setting out where improvements and potential harm to health might occur. The purpose of this HIA is to identify potential impacts on the health of the existing and new community as a result of the proposed Development, together with appropriate mitigation / recommendations as necessary.

1.3 Project Description

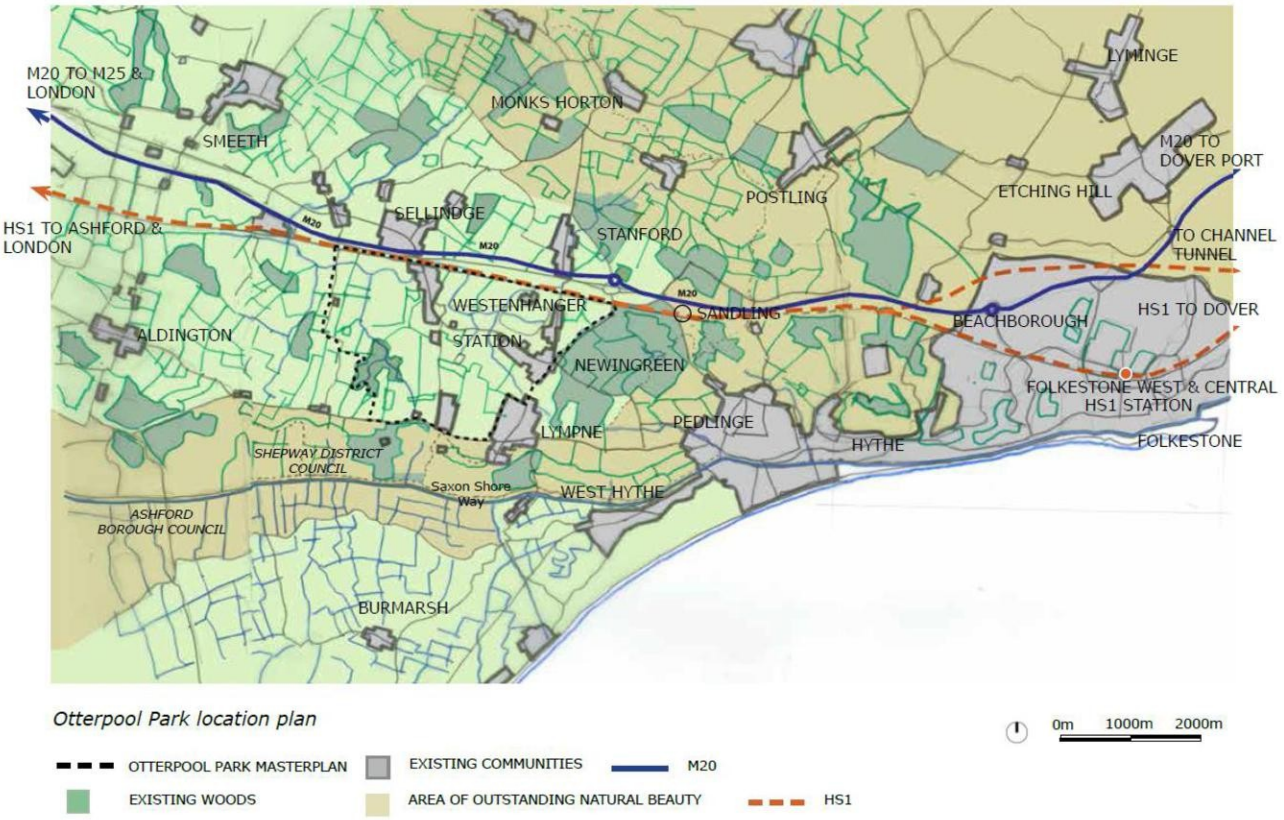
1.3.1 The OPA is for a new garden settlement of up to 8,500 dwellings and other uses including commercial, retail, education, health, community and leisure facilities, parking, landscaping, and public open space. A wider Framework Masterplan has been prepared for Otterpool Park which ultimately intends to deliver 10,000 homes.

1.3.2 Folkestone & Hythe District Council has produced a charter for the aspirations for Otterpool Park; creating an environmentally, socially and economically sustainable settlement., following Garden City Principles. The Government incentive for new, locally led garden cities is part of a range of measures aimed at increasing the housing supply. The Garden Cities initiative aims to deliver holistically planned new settlements, which enhance the natural environment and offer high quality affordable housing. These principles aim to integrate high-quality with community engagement and sustainability.

1.3.3 The Otterpool Park Charter outlines the promotion of healthy and sustainable environments within the healthy new town programme, to deliver high levels of public health within Otterpool Park. The aspiration to deliver the principles as set out within the charter are included within the assessment of this HIA.The site of the Proposed Development is located on 580ha of land directly south-west of Junction 11 of the M20 motorway, and south of the Channel Tunnel Rail Link (CTRL) in the administrative area of Folkestone & Hythe District Council in Kent (see Figure 1-1 below). Much of the site is greenfield in nature and is predominantly occupied by agricultural uses and associated farm holdings, as well as some residential and light commercial uses. A range of land uses associated with both rural and commercial/industrial activities are present on the site.

1.3.4 The boundary of the outline planning application site is shown on Drawing OPM(P)101 P submitted as part of the application.

Figure 1-1 Location Plan



1.3.5 The site is bounded by a section of Harringe Lane and farmland to the west and Harringe Brooks Woods and more farmland to the south-west. The southern boundary wraps around Lympne industrial estate. The south-eastern and eastern boundary is bordered by the settlements of Lympne and Newingreen and further north the eastern boundary runs parallel with the A20 before terminating at the intersection of the A20 (Ashford Road) with the CTRL (HS1) line. The northern site boundary runs largely parallel with and adjacent to the CTRL line, and borders the grounds of Westenhanger Castle, and the settlement of Sellindge. Within the main site area, the site boundary excludes parcels of land at Otterpool Manor, Upper Otterpool and south of Westenhanger.

1.3.6 The Kent Downs AONB is located immediately to the east and south of the site. . The AONB in this area forms an east-west orientated south-facing escarpment and is occupied by farm land, a number of woodlands and Lympne Castle. Further south of this lie Romney Marsh and the town of West Hythe.

1.3.7 There are a number of existing land uses on the site although a large proportion of the site area is occupied by farmsteads and associated agricultural land for a mixture of arable and livestock breeding purposes. There are farmsteads located at Somerfield Court Farm (west of Barrow Hill, Sellindge), a farmstead located east of Barrow Hill Sellindge, Hillhurst Farm (east of Westenhanger) and several smaller practices located adjacent to the A20 in the area of Newingreen.

1.3.8 The development proposals include up to 8,500 dwellings in addition to other uses including commercial, retail, education, health, community and leisure facilities, parking, landscaping, and public open space. A summary of the approximate maximum floorspace areas for each land use type is shown in Table 2-1. The Design and Access Statement provides more detail on the masterplan and character areas of the proposed Development.

Table 2-2 Proposed Development Quantum

Land Use / Class	Development Quantum (m2/ unit numbers)
Residential (C2, C3)	8,500 residential units (including 642 extra care homes)
Hotel (C1)	120 rooms (5,600m^2)
Commercial (B1)	52,008 m^2 (Net Internal Area)
Light Industrial (B2)	7,439 m^2 (Net Internal Area)
Retail (A1-A4)	26,250 m^2 (Gross Internal Area)
Education (D1)	5 primary, 1 secondary school and 12 nurseries (33,781m^2) (Gross Internal Area)
Healthcare	12,980m^2 (Gross External Area)
Community	7,200m^2 (Gross Internal Area)
Sport and Leisure (D2)	8,250 m^2 (Gross External Area)
Green Infrastructure	289.1ha

Source: Otterpool_Land Use Phasing_8.5k **_23-10-18**

1.3.9 The proposed Development is expected to be constructed in phases over an approximate 25 year period.

1.4 Report Structure

1.4.1 The HIA is structured as follows:

Chapter 2 sets out the policy context for the HIA.

Chapter 3 explains the methodology used to undertake the HIA.

Chapter 4 describes baseline information collated in relation to the local and wider study areas, providing a profile of local communities and vulnerable populations.

Chapter 5 identifies the potential health effects of the proposed Development during construction, early occupation and operational phases, taking into account information identified from the community profile, background evidence and environmental baseline data.

Chapter 6 provides a summary and conclusions.

2 Policy Context

2.1.1 A summary of the main policy context for the HIA, taking into account national, regional and local plans and policies is provided in Table 2-1 below.

Table 21 Regulatory and Planning Policy Framework Requirements

Policy / Legislation	Summary of Requirements
National Policy	
Government White Paper: Healthy Lives, Healthy People (2010)	This paper adopts a framework for tackling the wider social determinants of health, presenting the Government's commitment to protecting the population from serious health threats; helping people live longer, healthier and more fulfilling lives; and improving the health of the poorest, fastest. Local government and communities are responsible and accountable for healthy planning through planning, transport, schools and housing.
The National Planning Policy Framework (NPPF) (2019	Paragraph 91 states that planning policies and decisions should aim to achieve healthy, inclusive and safe places which: • promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other – for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages; • are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion – for example through the use of clear and legible pedestrian routes, and high quality public space, which encourage the active and continual use of public areas; and • enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling. Paragraph 92 focuses on the provision of social, recreational and cultural facilities and services the community needs; paragraphs 95 and 96 relate to the promotion of public safety and the provision of access to open space, sport and recreational activities respectively.
A Green Future: Our 25 Year Plan to Improve the Environment (2018)	Chapter 3 relates to connecting people with the environment to improve health and wellbeing, through using green spaces, encouraging children to be close to nature, in and out of school, greening our towns and cities and making 2019 a Year of Action for the environment.
Regional Policy	
South Kent Health and Wellbeing Strategy 2014	The strategy aims to address the health and wellbeing needs of people living in communities at every stage of their lives and has been written by the South Kent Coast Health and Wellbeing Board (SKC HWBB). The strategy is based on the Kent Joint Strategic

Policy / Legislation	Summary of Requirements
	Needs Assessment, which identifies current and future needs for adults and children, and other local data. It is an evolving strategy that will respond to the changes that occur through new ways of working and challenges that may be faced in the future.
Increasing Opportunities, Improving Outcomes: Kent County Council's Strategic Statement 2015-2020	The statement links the vision and priorities of the Council to a series of strategic and supporting outcomes that will drive the commissioning and service delivery across the County. The statement identifies the challenge of an increasingly older population with long-term health conditions. The vision recognises this by enforcing health as one of the strategic outcomes for '*Kent communities to feel the benefits of economic growth by being in-work, healthy and enjoying a good quality of life*'.
Local Policy and Strategy Documents	
Shepway Local Plan Review (2006)	The Local Plan has no specific health policies. However, policies SD1, LR1, LR3 and LR9 relate to the promotion of leisure and recreation facilities and the loss of open space. The criteria for Sustainable Development in Policy SD1 includes the 'need to maintain and enhance the provision of recreational open space and amenity land'. The Leisure and Recreation Policy LR1 states that planning permission will not be granted if development proposals would result in the loss of indoor recreational facilities whereas the development of formal sport and recreational facilities in the countryside are promoted by Policy LR3. The provision of an adequate level of open space within the district is supported by Policy LR9. The policy seeks to protect existing and potential areas whilst providing new open spaces in areas where deficiency exists in the district.
Shepway Core Strategy 2013	The Core Strategy sets out the settlement hierarchy and Policy SS3 Place-Shaping and Sustainable Settlements Strategy seeks to promote the creation of sustainable, vibrant and distinct communities including the provision of transport infrastructure particularly for walking and cycling.
Folkestone & Hythe District Council Places and Policies Local Plan Submission Draft (February 2018)	Policy HW2 (Improving the health and Wellbeing of the Local Population and Reducing Health Inequalities) states that for residential development of 100 or more units and non-residential development in excess of 1,000sqm a Health Impact Assessment will be required, which will measure the wider impact of the development on healthy living and the demands that may be placed on health services and facilities arising from the development. Where significant impacts are identified, measures to address the health requirements of the development should be provided and/or secured by planning obligations or planning conditions as appropriate. Policy HW3 (Development that Supports Healthy, Fulfilling and Active Lifestyles) states that to increase, create and safeguard opportunities for healthy, fulfilling and active lifestyles and to reduce

Policy / Legislation	Summary of Requirements
	the environmental impact of importing food development proposals should: 1. Incorporate productive landscapes in the design and layout of buildings and landscaping of all major developments; 2. Not result in the net loss of existing allotments; and 3. Not result in the loss of the best and most versatile agricultural land (Grades 1, 2 and 3a) unless there is a compelling and overriding planning reason to do so and mitigation is provided through the provision of productive landscapes on-site or in the locality. Policy HW4 relates to the promotion of active travel and notes that planning permission will be granted for development likely to give rise to increased travel demands, where the site has (or will attain) sufficient integration and accessibility by walking and cycling including, where appropriate, through: 1. The provision of new cycle and walking routes that connect to existing networks, including the wider public rights of way network, to strengthen connections between settlements and the wider countryside; 2. The protection and improvement of existing cycle and walking routes, including the public rights of way network, to ensure the effectiveness and amenity of these routes is maintained, including through maintenance, crossings, signposting and way-marking, and, where appropriate, widening and lighting; 3. The provision of safe, direct routes within permeable layouts that facilitate and encourage short distance trips by walking and cycling between home and nearby centres of attraction, and to bus stops or railway stations, to provide real travel choice for some or all of the journey; and 4. The provision of, or contributions towards, new cycle and walking routes identified in adopted strategic documents.
Folkestone & Hythe District Council Core Strategy Review (2018)	Policy SS6 (New Garden Settlement – Development Requirements) relates to the provision of a new garden settlement, to be developed on garden town principles and which will have a distinctive townscape and outstanding accessible landscape. It will be planned to be sustainable, providing new homes with a broad mix of tenures, employment opportunities and community facilities within easy walking and cycling distance. It will be a landscape-led development with an emphasis on woodland planting, open space and recreation that supports healthy living and encourages interaction between residents. Environmentally the settlement will be a beacon of best practice, making best use of new technologies, and will be designed to achieve a low carbon, low waste and low water usage development with an aspiration for water and carbon neutrality. The policy states that a health centre shall be provided in the early phases of development, in partnership with local Clinical Commissioning Groups and the Kent Health and Wellbeing Board, drawing from exemplar facilities elsewhere. The centre shall be

Policy / Legislation	Summary of Requirements
	designed to deliver an integrated service for patients - including a cluster of general practitioners, a wide range of diagnostic services and primary care treatment – to minimise the requirement for secondary care treatment at local hospitals. The centre should be located on an accessible site close to other community services.
Folkestone & Hythe District Council Corporate Plan 2017-2020	The Council Corporate Plan seeks to invest in the next generation through deliverable strategic objectives. 'Health Matters' is one of the objectives to keep the communities healthy and safe. As part of the objective, priorities are set, including reducing impact of anti-social behaviour, enhancing access to open space, new leisure facilities, best use of community assets and reducing health inequalities through partnership working.

3 Methodology

3.1 Introduction

3.1.1 This Chapter describes the methodology used to undertake the HIA, including information relating to the geographical and temporal scope.

3.1.2 The HIA has followed guidance produced by the NHS London Healthy Urban Development Unit (HUDU), Planning for Health: Rapid Health Impact Assessment Tool (third edition April 2017). The HUDU guidance helps identify those determinants of health likely to be influenced by a specific project or proposal. The aim of the Assessment Tool is to ensure 'health is properly considered when evaluating and determining planning proposals and that where possible development plans and proposals have a positive rather than a negative influence on health'.

3.1.3 A scoping exercise to identify those determinants to be assessed within the HIA was undertaken during the summer of 2018, the findings from which are summarised in Appendix A.

3.2 Geographical Scope

3.2.1 The proposed Development has the potential for health impacts on the existing population of settlements in the vicinity of the site and surrounding area. The geographical scope for the HIA can therefore be described at the following levels:

Local level	using data at Lower Super Output Area (LSOA) level where available.
District level	using data covering Folkestone & Hythe District Council.
Regional level	using data at Kent / South-East England level, primarily for comparative purposes.

3.2.2 Where relevant, the spatial scopes of other environmental topics where impacts may be felt over a wider area, specifically traffic and transport, air quality and noise, have been taken into consideration. These spatial scopes are described in the relevant Chapters of the Environmental Statement.

3.3 Temporal Scope

3.3.1 Different impacts are likely to be experienced during different stages of the development. Accordingly, three stages have been identified during which it would be beneficial to consider specific health impacts. These are:

Construction	Impacts of the proposed Development on residents of existing settlements and properties
Early Occupation	Impacts of the proposed Development on residents of existing settlements and properties as well as early occupants of Otterpool Park
Full Build-Out	Impacts of the proposed Development on residents of existing settlements and properties as well as all occupants of Otterpool Park

3.4 Baseline Data

3.4.1 Baseline data relating to health and well-being has been collected for each spatial level as relevant using a variety of sources including:

- Office for National Statistics, for example Census data (2011)
- Public Health England community profile data (2017 and 2018)
- Public Health England localhealth.org website
- Department for Communities and Local Government (DCLG), for example Indices of Deprivation (2015)

- Regional and district level strategy documents, including the Joint Strategic Needs Assessment for Kent, Shepway in Context, and the Shepway Community Safety Plan.

3.4.2 Further baseline information has been derived from other reports and documents prepared in support of the outline planning application for Otterpool Park. These have included:

- Planning Statement
- Design and Access Statement
- Environmental Statement
- Energy and Waste Strategies
- Sustainability Statement
- Transport Assessment

3.4.3 The identification of population and human health issues must pay specific attention to vulnerable groups; these include children, older people, people with disabilities and people from low income groups.

3.5 Relevant Research

3.5.1 Reviewing available research and information has enabled understanding of the links and potential interactions between topics scoped in to the HIA and the effects on health and well-being. A desk-top literature research has been undertaken to identify sources of information and findings of relevance to individual effects and topics, helping to inform the assessment.

3.6 Assessment of Impacts

3.6.1 For each of the topic areas scoped in to the HIA the following criteria have been used, together with professional judgement, to make an assessment of the potential impacts on health and well-being:

- change – identification of the aspect of the scheme that would cause the change, how the health determinant might change as a result (including whether the change would be beneficial or adverse);
- duration – an assessment of the duration of change (temporary or permanent);
- intensity and exposure – consideration of the magnitude or severity of the change in the health determinant, and the scale of people likely to be exposed to the change, including identification of vulnerable populations.

3.6.2 Table 4-1 sets out how significance of impact has been identified taking into account the above.

Table 4-1 Assessment of Health Impacts

Significance of Impact	Definition	Intensity and Exposure	Duration
Major Negative	Health effects are categorised as a major negative if they could lead directly to deaths, acute or chronic diseases or mental ill health. They can affect either both physical and mental health, either directly or through the wider determinants of health and wellbeing. These effects can be important local, district, regional and	The exposures tend to be of high intensity and/or over a large geographical area and/or affects a large number of people (e.g. over approximately 500 people) or impacts on vulnerable groups	Long term duration Intermittent, temporary or permanent in nature.

Significance of Impact	Definition	Intensity and Exposure	Duration
	national considerations. Mitigation measures and detailed design work can reduce the level of negative effects though residual effects are likely to remain.		
Major Positive	Health effects are categorised as a major positive if they prevent deaths/prolong lives, reduce/prevent the occurrence of acute or chronic diseases or significantly enhance mental wellbeing.		
Moderate Negative	Health effects are categorised as a moderate negative if health effects are long term nuisance impacts e.g. odours and noise or may lead to the exacerbation of an existing illness. Moderate negative effects may include nuisance/quality of life impacts which may affect physical and mental health either directly or through the wider determinants of health. The cumulative effect of a set of moderate effects could lead to a major effect. These effects could be important locally or regionally. Mitigation measures and detailed design work can reduce an in some/many cases remove the negative and enhance the positive effects through residual effects are likely to remain.	The exposures tend to be of moderate intensity and/or over a relatively localised area and/or likely to affect a moderate-large number of people e.g. between approximately 100-500 people and/or vulnerable groups.	Medium term duration Intermittent, temporary or permanent in nature.
Moderate Positive	Health effects are categorised as a moderate positive if they enhance mental wellbeing significantly and/or reduce exacerbations to existing illness and reduce the occurrence of acute or chronic diseases.		
Minor Negative Minor Positive	Health effects are categorised as minor positive or negative if they lead to lesser change in quality of life or wellbeing. Increases or reductions in noise, odour, visual amenity, etc. are examples of effects, which could be important local considerations. Mitigation measures and detailed	The exposures tend to be of low intensity and/or over a small area and/or affect a small number of people e.g. approximately less than 100.	Short term duration Intermittent, temporary or permanent in nature.

Significance of Impact	Definition	Intensity and Exposure	Duration
	design work can reduce the negative and enhance the positive effects such that there are only some residual effects remaining.		
Neutral / No Effect	No health effects or effects within the bounds of normal/accepted variation.	N/A	N/A

4 Community Profile

4.1 This section provides a profile of the existing community with reference to demographic, socio-economic and health-related characteristics.

4.1 Demographic Characteristics

4.1.1 Table 4-1 shows the population profile for the local and wider study areas as taken from Census data for 2001 and 2011, with population estimates for 2017. The table shows that population growth has been lower in the local study area than is the case at district or county level (where data is available), as would be expected in a more rural community.

Table 4-1 Population Levels and Change (%)

	2001	2011	Population Growth 2001-2011 (%)	2017 Population Estimate	Population Growth 2011-2017
Local Study Area (LSOA)	5,269	5,627	6.8	5,777	2.7
Folkestone & Hythe District	N/A	107,969	N/A	111,400	3.18
Kent County	1,329,718	1,463,740	10.08	1,554,600	6.21
South East	8,000,645	8,634,750	7.93	9,080,800	5.17
England	49,138,831	53,012,456	7.88	58,744,600	10.81

Source: Office for National Statistics Census Data 2001, 2011, Population Estimates Mid-2017

4.1.2 Population density for each of the three LSOAs covered by the application Site (Shepway 008D, Shepway 009C and Shepway 009D) was 0.7, 1.3 and 2.2 persons per hectare respectively in 2011, compared to a district-wide population density of 3.0. Again, a lower population density is expected in a more rural area.

4.1.3 Table 4-2 shows population by gender for each of the study areas, which are broadly comparable with a slightly higher proportion of females than for the district, region or England as a whole.

Table 4-2 Gender

	Local Study Area	Folkestone & Hythe District	Kent County	South East	England
Males (%)	48.0	49.2	48.9	49.1	49.2
Female (%)	52.0	50.8	51.1	50.9	50.8

Source: Nomis, 2011

4.1.4 Table 4-3 shows the age profile for each of the study areas (using 2017 population estimate data). The local study area clearly has a significantly older age profile than district, county, regional or

national study areas. County and regional study areas exhibit a higher proportion of younger people than is the case for Folkestone & Hythe District.

Table 4-3 Age Profile (%)

Age Group	Local Study Area	Folkestone & Hythe District	Kent	South East	England
0-15	15.3	17.9	19.3	19.0	18.9
16-24	7.5	10.6	11.3	11.2	11.9
25-44	17.3	23.3	25.0	26.5	27.5
45-64	32.6	27.5	26.4	26.1	25.4
65+	27.3	20.8	17.9	17.1	16.4

Source: Mid-Year Population Estimates, 2017

4.1.5 Table 4-4 outlines data relating to ethnicity, identifying that the local study area, district of Folkestone and Hythe and the County of Kent have higher proportions of people from a white ethnic background than the South East or England as a whole. Indeed, the local study area is predominantly comprised of people from white ethnic backgrounds.

Table 4-4 Ethnicity (%)

Ethnicity	Local Study Area	Folkestone & Hythe District	Kent	South East	England
White	98.1	94.7	93.7	90.7	85.4
Mixed	0.9	1.2	1.5	1.9	2.3
Asian/Asian British	0.1	3.4	3.3	5.2	7.8
Black/African/Caribbean /Black British	0.2	0.4	1.1	1.6	3.5
Other ethnic group	0.1	0.3	0.5	0.6	1.0

Source: Census Data 2011

4.1.6 Table 4-5 shows data relating to household size. The table shows that the local study area primarily comprises one family households, with the proportion of single person households being below the level experienced at district and county level.

Table 4-5 Housing Tenure (%)

	Local Study Area	Folkestone & Hythe District	Kent	England
One person household	24.2	33.3	28.8	30.2
One family household	69.5	60.2	64.7	61.8

	Local Study Area	Folkestone & Hythe District	Kent	England
Other	6.3	6.5	6.5	8.0

Source: Census Data 2011

4.1.7 Housing tenure data is shown in Table 4-6. The local study area shows a significantly higher proportion of home ownership than is the case in district, county, regional and national study areas. In terms of property prices, Folkestone and Hythe was one of only two districts in Kent that saw an increase in property sales in 2017 compared to 2016.

Table 4-6 Housing Tenure (%)

	Local Study Area	Folkestone & Hythe District	Kent	South East	England
Owned	83.0	64.8	67.3	67.6	63.3
Shared ownership	0.6	0.5	1.0	1.1	0.8
Private rented	5.2	22.2	16.5	16.3	16.8
Social rented	9.6	11.2	13.9	13.7	17.7
Living rent-free	1.6	1.3	1.3	1.3	1.4

Source: Census Data 2011

4.2 Socio-Economic Characteristics

4.2.1 Headline economic data taken from the document 'Shepway in Context'[1] is summarised as follows:

- Between October 2016 and September 2017, 79.7% of Shepway's working age population (16-64) was economically active, which is lower than the South East (81.2%) but higher than Great Britain (78.1%) as a whole (Nomis, 2017);
- The proportion of economically active people who were unemployed in Shepway was 3.7%, which is higher than regional (3.4%) but lower than national levels (4.5%) (Nomis, 2017);
- At a local scale, there is a greater proportion of males in employment (85.2%) than females (72.3%). This difference in employment statistics between men and women is similar at regional and national level.
- The most significant contributing factors to economic inactivity at regional and national level are studying and looking after family or home. Dominant employment sectors are professional elementary occupations (20.0%) and caring, leisure and other service occupations (14.1%).

4.2.2 Table 4-7 shows the economic activity and inactivity rates for Folkestone and Hythe District compared with Kent and the South East. The proportion of people economically active in Folkestone and Hythe District is lower than for the other two geographical areas; the proportion of people who are self-employed is also lower. A higher proportion of economically inactive residents within Folkestone and Hythe District are classified as long-term sick than is the case for the county or wider region.

[1] Shepway District Council, 2014. Shepway in Context- a Socio-economic and Property Analysis

Table 4-7 Economic Activity and Inactivity

	Folkestone & Hythe District	Kent	South East
Economically Active	73.2%	79.8%	81.1%
In employment	70.4%	75.6%	78.3%
Employees	63.2%	63.4%	66.2%
Self-employed	7.2%	11.7%	11.8%
Unemployed	4.5%	5.1%	3.5%
Economically Inactive	26.8%	20.2%	18.9%
Looking after family / home	21.2%	25.8%	24.8%
Long-term sick	33.0%	24.1%	18.7%

Source: Nomis July 2017-Jun 2018

4.2.3 Table 4-8 provides details of employment by occupation. The table shows that although there is a higher proportion of residents in the associate professional and technical group compared to Kent and the South East, the proportion of residents in the top three groups is lower at district level (41% for Folkestone & Hythe District compared to 45% for Kent and 50.4% for the South East region). The District sees higher proportions of residents in caring, leisure and services occupations, reflecting the older population profile.

Table 4-8 Employment by Occupation

Soc 2010 Group	Folkestone & Hythe District	Kent	South East
Managers, directors and senior officials	8.0%	11.0%	12.1%
Professional occupations	14.8%	19.0%	22.3%
Associate professional & technical	18.2%	15.0%	16.0%
Administerial & secretarial	11.6%	10.9%	10.4%
Skilled trades occupations	12.7%	11.2%	9.5%
Caring, leisure & other service occupations	13.9%	9.3%	8.9%
Sales and customer service occupations	5.7%	6.6%	7.1%
Process plant & machine operatives	5.0%	5.8%	4.6%
Elementary occupations	10.1%	10.4%	8.8%

Source: Nomis July 2017-Jun 2018

4.2.4 The ONS claimant count for Folkestone and Hythe District in October 2018 was 2.7%; which compares to 2.0% for Kent and 1.4% for the South East as a whole. A higher proportion of claimants are males across all three geographies. Folkestone and Hythe District shows a higher proportion of

claimants in the 18-21 age group than is the case for Kent or the South East (5.0% compared to 3.6% and 2.1% respectively).

4.2.5 With regard to qualifications, statistics for Folkestone & Hythe District show that a higher proportion of residents have no or lower level qualifications than is the case at county level or for the South East (Table 4-9).

Table 4-9 Qualifications

Qualifications	Former Shepway District	Kent	South East
No qualifications	24.7	22.5	19.1
GCSE and A level equivalents	44.3	43.9	42.2
Further and higher education	21.8	24.7	29.9
Other qualifications	5.4	5.1	5.2

Source: Census data 2011

4.2.6 Average gross weekly pay for full-time workers in 2018 was £519.7 for residents of Folkestone and Hythe District, compared to £598.1 for Kent and £614.5 for the South East (Nomis 2018).

Deprivation

4.2.7 The English Indices of Deprivation 2015 provide a relative measure of deprivation at small area levels (Lower Super Output Areas) across England, based on information relating to income, employment, health and disability, education, crime, barriers to housing and services and living environment, which can be combined into an overall Index of Multiple Deprivation (IMD).

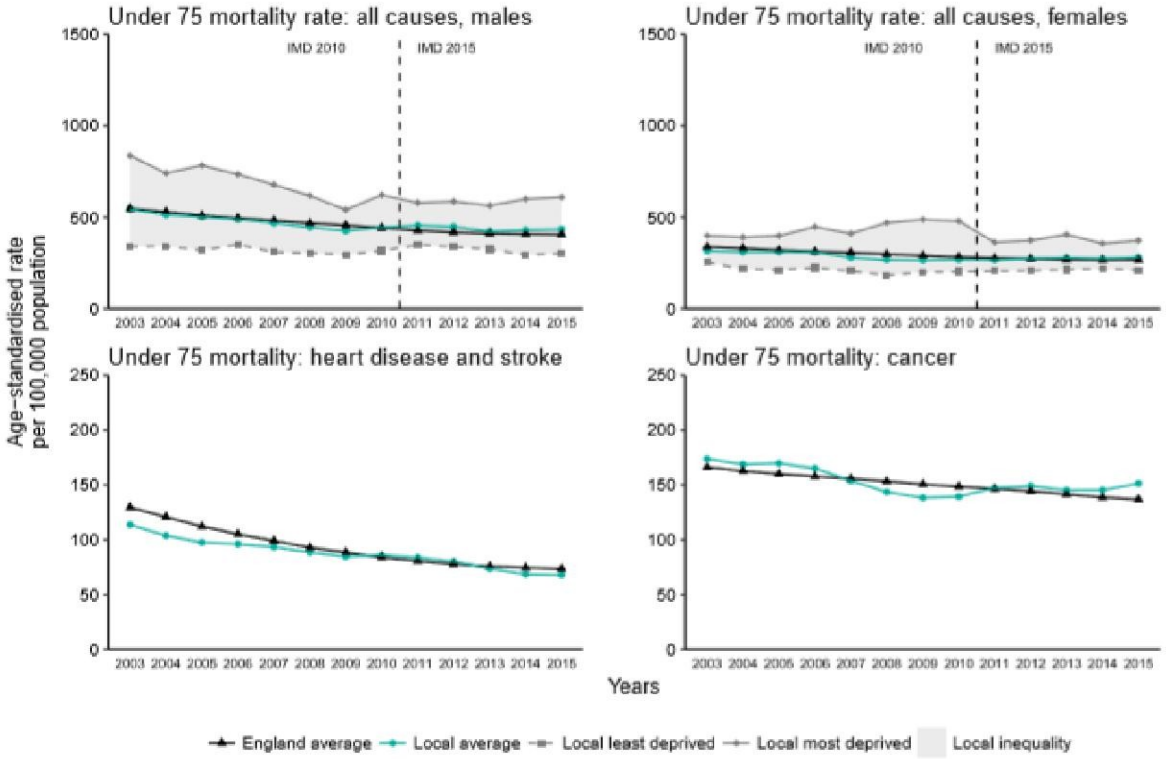
4.2.8 Deprivation is measured across seven different areas or domains – income, employment, health, education, living environment, crime and barriers to services using a wide range of indicators. These measures are aggregated to create the index of multiple deprivation (IMD), which gives an indication of overall deprivation.

4.2.9 According to the 2015 Indices of Deprivation, levels of deprivation in Folkestone & Hythe District as a whole have reduced between 2010 and 2015 relative to other local authorities in England. However, four LSOAs within Folkestone & Hythe remain in the top 10% most deprived communities in England, namely Folkestone Harbour, Folkestone Harvey Central, Folkestone East and Folkestone South.

4.3 Health Profile

4.3.1 Public Health England prepares 'Health Profiles' that provide an overview of health for each local authority in England. The most recent reports were published in July 2018. The Health Profile for Folkestone & Hythe District identifies that approximately 19% (3,600) of children live in low income families. Life expectancy is 6.9 years lower for men and 3.7 years lower for women in the most deprived areas of Folkestone & Hythe than in the least deprived areas. Figure 4-1 shows trends in death rates in people under 75 between this area and England.

Figure 4-1 Trends in Mortality Rates – Folkestone & Hythe District



Source: Public Health England Health Profile, July 2018

4.3.2 Local authorities are required to produce a Joint Strategic Needs Assessment (JSNA) of the health and well-being of their local community. A JSNA was last produced by Kent County Council in 2016. Key findings from this assessment include:

- The prevalence of obesity varies across Kent, with the highest prevalence rates of adult obesity to be found in North Kent in Dartford and Swale CCGs and in East Kent, Shepway CCG. The highest rates in four to five-year olds are found in Shepway, Dartford, and Swale.
- The highest expected prevalence of dementia is seen in Shepway, Thanet, Dover and Sevenoaks. There is a clear link between risk factors for chronic disease and the development of dementia. This link should be emphasised at both a population level, through inclusion of dementia in strategies to prevent non- communicable diseases, and at patient level when counselling individual patients about the risk of dementia.

4.3.3 Table 4-11 shows the reported health of residents living within the local and wider area, as taken from Census data 2011 (Nomis). Residents living within Folkestone & Hythe and Kent report marginally poorer levels of health when compared to the South East and England as a whole.

Table 4-11 General Health

	Local Study Area	Folkestone & Hythe District	Kent	South East	England
Very Good Health	44.9%	42.2%	46.7%	49.0%	47.2%
Good Health	37.1%	36.1%	34.9%	34.6%	34.2%
Fair Health	13.5%	15.2%	13.3%	12.0%	13.1%
Bad Health	3.6%	4.9%	4.0%	3.4%	4.2%
Very Bad Health	1.1%	1.5%	1.1%	1.0%	1.2%

Source: Nomis, 2011

4.3.4 Table 4-12 shows the proportion of residents experiencing long-term health problems. The table shows that there is a higher proportion of residents for whom day-to-day activities are 'limited a lot' within the district of Folkestone & Hythe than Kent, the South East or England as a whole.

Table 4-12 Long Term Health Problem or Disability

Long-term health problem or disability	Local Study Area	Folkestone & Hythe District	Kent	South East	England
Day-to-day activities limited a lot	7.8%	10.0%	8.0%	6.9%	8.3%
Day-to-day activities limited a little	10.5%	11.1%	9.6%	8.8%	9.3%
Day-to-day activities not limited	8.2%	79.0%	82.4%	84.3%	82.4%

Source: Nomis, 2011

4.3.5 Public Health England provide a range of statistical data relating to health conditions and issues at local authority and smaller area levels (for example ward data). The following section provides a summary of key health indicators for the local and wider area.

4.3.6 Table 4-13 shows the life expectancy of residents born between 2014 – 2016. The data shows the life expectancy of both male and female residents for the Folkestone & Hythe District and County of Kent is marginally lower than for the South East and England as a whole.

Table 4-13 Life Expectancy (Years)

Life Expectancy	Folkestone & Hythe District	Kent	South East	England
Life expectancy at birth for males 2014 – 2016	79.2	79.9	80.6	79.5
Life expectancy at birth for females 2014 - 2016	84.0	83.4	84.0	83.1

Source: Public Health England, produced from ONS data

4.3.7 Table 4-14 shows the rate of deaths per 100,000 resident population across geographies. These rates are highest within Folkestone & Hythe District compared to the county, region and England as a whole.

Table 4-14 Causes of Death 2014-2016

Cause of Death (per 100,000 people)	Folkestone & Hythe District	Kent County	South East	England
Infant mortality	3.1	3.5	3.2	3.9
Killed and seriously injured on roads	55.4	47.6	50.6	39.7
Suicide rate	13.5	11.6	9.8	9.9
Smoking related deaths	-	268.9	238.5	272.0
Under 75 mortality rate: cardiovascular	68.0	64.6	61.5	73.5
Under 75 mortality rate: cancer	151.3	134.8	126.9	136.8
Excess winter deaths	23.6	18.8	17.4	17.9

Source: Public Health England, produced from ONS data

4.3.8 Table 4-15 shows that childhood obesity is higher in the Folkestone & Hythe District than the England average at Year 6 but the same at Reception age.

Table 4-15 Children's Weight Indicators 2016/17 (Percentage of Children (estimated from MSOA level data)

Children's Weight	Folkestone & Hythe District	Kent County	South East	England
Obese children (Reception Year)	9.6	10.3	8.5	9.6
Obese children (Year 6)	20.8	18.5	16.9	20.0

Source: Public Health England

4.3.9 The Government published its mental health strategy 'No Health Without Mental Health' in 2011, which highlighted that physical and mental health should be given equal weighting, with work needed towards an integrated system of care that considers the holistic needs of the individual. There are a

wide range of mental health conditions and disorders, with common mental health conditions such as depression and anxiety affecting one in five of the population. Issues of mental wellbeing, mental illness and mental distress are all interlinked, and there is a clear link between loneliness and poor mental and physical health.

4.3.10 The Kent Health and Well-being Strategy includes as one of its outcomes to 'ensure that those with mental ill health are supported to live well'. Priorities within Kent include tackling areas where Kent is performing worse than the England average; tackling health inequalities related to people who have mental health conditions; tackling gaps in provision and quality; and transforming services to improve outcomes, patient experiences and value for money.

4.3.11 The Kent Joint Strategic Needs Assessment Exceptions Report for 2017/18 highlights specific statistics in relation to mental health in the county including that:

- there are an estimated 163,500 people (12.9%) across Kent and Medway aged over 16 who have a treatable common mental illness (depression and/or anxiety)
- people living in most deprived areas are disproportionately affected
- suicide rates in Kent are significantly higher than the national average for 2014-16 (a rate of 11.6 per 100,000 population for Kent against a rate of 9.9 for England
- around 10% of children aged between 5-16 years in Kent are believed to have a diagnosable emotional or behavioural mental health condition, with the percentage estimated to have increased since this time.

4.3.12 The long-term strategic goals of the NHS South Kent Coast Clinical Commissioning Group (CCG) include prioritising and tackling mental health, as an area recognised for improvement. A newly procured children and young people's mental health service went live in September 2017[2].

4.3.13 The Measuring National Well-being programme (MNW) began in 2010 and gathers data relating to personal well-being (including happiness, anxiety levels and life satisfaction). Table 4-16 shows recorded data for happiness and anxiety for the last four years at local, regional and national level.

Table 4-16 Personal Well-being Data

	Area	2014/15	2015/16	2016/17	2017/18
Happiness	England	7.46	7.47	7.51	7.52
	South-East	7.54	7.54	7.58	7.58
	Kent	7.48	7.50	7.59	7.50
	Shepway	7.59	7.57	7.57	6.84
Anxiety	England	2.86	2.87	2.91	2.90
	South-East	2.82	2.84	2.87	2.92
	Kent	2.63	2.93	2.84	2.86
	Shepway	2.16	3.18	3.12	2.94

Source: Office for National Statistics, Local Authority Update 2018

4.3.14 The data shows that, at the local level, anxiety levels have been slightly higher and general happiness slightly lower than regional and national averages.

[2] NHS South Kent Coast Clinical Commissioning Group Annual Report 2017/18

5 Assessment

5.1 Overview

5.1.1 The assessment considers the potential effects on health in relation to the following factors as reflected on in the Otterpool Park Charter:

- Housing quality and design
- Access to healthcare services and other social infrastructure
- Access to open space and nature
- Accessibility and active travel
- Crime reduction and personal safety
- Access to healthy food
- Access to work and training
- Air quality, noise and neighbourhood amenity
- Social cohesion and lifetime neighbourhoods
- Minimising the use of resources
- Climate change

5.2 Housing Quality and Design

5.2.1 This section considers the potential effects on health in relation to housing quality and design associated with the construction, early occupation and operational phases of the proposed Development.

Evidence Review

5.2.2 Housing is inextricably linked to health, in terms of the provision of physical shelter, sense of security and comfort[3]. The home and neighbourhood environment provide structural and social security, without which health can be negatively impacted[4]. Aspects of the home deriving from structural features, design and quality (for example the presence of mould, or cold temperatures) can directly impact health; similarly, location of the home, the wider neighbourhood environment and social connectedness to a community can indirectly impact health[5]. Housing quality can impact on the mental well-being of local residents in addition to their physical health[6]. Research undertaken in 2018[7] found that meeting national housing quality standards through multiple home improvements was associated with reduced emergency hospital admissions.

5.2.3 Housing Corporation Design and Quality Standards (April 2007) quote that 'new homes should be designed and constructed in a sustainable manner using products and processes that reduce environmental impact, better adapt to climate change, with lower running costs and incorporating features that enhance the health and well-being of constructors, occupiers and the wider community'. The Housing Forum[8] (2017) believe that 'better governance of the industry, increased training and supervision, greater use of offsite construction, more emphasis on good design underpinned by standards, and better procurement and more transparency for consumers, can provide a bedrock for improved housing quality'.

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[3] Shaw, M., 2004. Housing and public health. *Annual. Rev. Public Health*, *25*, pp.397-418.
[4] Dunn, J.R., 2002. Housing and inequalities in health: a study of socioeconomic dimensions of housing and self reported health from a survey of Vancouver residents. *Journal of Epidemiology & Community Health*, *56*(9), pp.671-681.
[5] Suglia, S.F., Duarte, C.S. and Sandel, M.T., 2011. Housing quality, housing instability, and maternal mental health. *Journal of Urban Health*, *88*(6), pp.1105-1116.
[6] Evans, G.W., Wells, N.M., Chan, H.Y.E. and Saltzman, H., 2000. Housing quality and mental health. *Journal of consulting and clinical psychology*, *68*(3), p.526.
[7] National Institute for Health Research (2018) *Health impact, and economic value, of meeting housing quality standards: a retrospective longitudinal data linkage study.*
[8] The Housing Forum: Building Homes Better – The quality challenge (December 2017).

5.2.4 The Design Council[9] place a strong emphasis on housing quality and design, believing that driving up the quality of new homes will lead to the creation of better places to live, through new advances in housing design and production and the use of innovative ideas to purpose build properties. From a health perspective, the Design Council quote that '*the internal environment should enhance the health and wellbeing of the occupants with particular attention to daylight and sunlight penetration, good air quality and ventilation to avoid overheating'*, enhancing the health and wellbeing of occupants. Recommendations include for the government to continue to regulate raised standards for construction to improve environmental performance and health and for planners and designers to think about the long-term legacy of those who live in new homes.

5.2.5 The Commission for Architecture and the Built Environment (CABE) published 'Improving the Quality of New Housing' in 2010. The report identified that 'the design quality of new housing underpins the success or failure of a community'. Not only can good quality housing improve the social well-being and quality of life and people's sense of pride in their neighbourhood, but it can bring public health benefits – CABE reference here the costs to society of poor housing in particular.

5.2.6 The Code for Sustainable Homes was wound down in 2014 and is now generally only voluntary. In March 2015, the government launched a new approach to housing standards, publishing a new set of national technical standards including a nationally described space standard; energy requirements for dwellings are now set by building regulations and are equivalent to Code level 4.

5.2.7 The National Planning Policy Framework (NPPF) 2019 states that local authorities should consider the size, type and tenure of housing need for different groups of people in the community, (including, but not limited to, those who require affordable housing, families with children and older people, students, people with disabilities, service families, travellers, people who rent their homes and people wishing to commission or build own homes).

5.2.8 Environmental Baseline

5.2.9 The Folkestone & Hythe District Council Places and Policies Local Plan (Submission Draft February 2018) Plan) includes policies to ensure that new developments will be sustainable, the natural and historic environment will be maintained and that new developments through their design will improve the quality of life of residents and help to foster healthy lifestyles. These policies are referenced in the Folkestone and Hythe District Council Core Strategy Review (2018), notably Policy SS6 relating to development requirements of the proposed garden settlement at Otterpool Park.

5.2.10 The Vision for Kent describes the challenges facing Kent and the priorities for the County for the next ten years. The strategy promises to ensure there is choice of high-quality and accessible services that will tackle disadvantage particularly through housing that supports strong communities, provides a good quality of life and reduces household costs.

5.2.11 Market evidence suggests significant demand for homes in Kent, and issues relating to housing affordability and supply not keeping pace with demand. The Strategic Housing Market Assessment (SHMA) for the formerly named Shepway District points to net housing completions averaging 333 dwellings per annum between 2001 and 2015. According to the Shepway Housing Strategy 2011-2016, Shepway has the lowest average household size in Kent and it continues to decline partly driven by the older age profile of the District. The 2014 Shepway Equality and Diversity Profile stated that the average house price is more than six times the average household income in the District.

5.2.12 The Objectively Assessed Need projections indicate that the number of people aged 65+ years in the Folkestone & Hythe District is set to increase significantly from 24,257 in 2014 to 40,536 in 2027, a rise of 60.5%. This is anticipated to cause and increased demand for retirement homes of circa 1,280 units which represents 9.3% of total household growth in the district.

Otterpool Park

5.2.13 The proposed Development comprises 8,500 new homes. The majority of new homes within the application Site boundary (92%) comprise residential development under Use Class C3; the

[9] Design Council: How design is improving the quality of new homes (April 2016).

remaining 8% comprise extra care housing under Use Class C2. The Housing Strategy which accompanies the Outline Planning Application (OPA) summarises the key features of residential development, which will:

- be phased to maintain a steady rate of delivery on site, with the scale of delivery informed by market demand
- The initial phase of development will focus on housing in and around the town centre and railway station to ensure accessibility and cohesionensure a variety of house types are provided in each Development Zone to offer a range of choice to suit a variety of lifestyles (i.e. homes are built in a range of styles, sizes and tenures to suit different requirements and preferences, and also in order to create quality of place)
- be planned in accordance with minimum space standards for all homes.

5.2.14 The Framework Masterplan states that 'quality is important, in building design, building standards and environmental standards'. The Housing Strategy states that design guidance will ensure there will be a variety in the housing types in each phase provided to offer choice to suit a variety of lifestyles. It is important that homes are built in a range of styles, sizes and architectural styles, to suit different requirements and preferences, and also in order to create quality of place. Homes will include apartments in the more accessible locations and close to services and facilities, town houses, terraced housing and family housing in forms which embrace the move towards more sustainable ways of living and will include a significant proportion of smaller homes.

5.2.15 The proposed Development aims to achieve provision of 22% affordable housing in line with emerging policy requirements. A phasing plan for affordable provision overall and within the various affordable housing types will be developed with the overall end target of 22% clearly established. The affordable housing will be distributed throughout the development in small groups or clusters.

5.2.16 The proposed Development will provide a mix of options for older people to meet a range of care needs including:

- large flats to appeal to down sizers
- a retirement village in close proximity to the town centre, enabling easy access to facilities and facilitating an independent lifestyle
- extra care with a range of levels of support from independent living to care packages
- a nursing home for those with higher care needs.

5.2.17 Otterpool Park has the potential to test delivery of self-build housing on a large scale and the proposed Development will seek to deliver at least 5% self and custom build, with a proportion on each phase.

5.2.18 Minimum space standards will be set for the proposed Development in accordance with policy. All houses will be delivered to a minimum of Level 4 of the Code for Sustainable Homes (or equivalent) and will also be built to meet the proposed 2016 Zero Carbon standard, with a fabric first approach. It is intended to allow flexibility for increasing standards, and as such it is expected that future phases will be delivered to meet future best practice standards.

5.2.19 The proposed Development will have an aesthetically pleasing townscape in respect of the North Downs setting. The townscape will comprise of urban higher density housing and supporting uses within the town centre, to enhance viability and liveliness. As the distance from the town centre increases the density of development will decrease and character become increasingly more village style to reflect garden city principles.

Assessment of Health Effects

5.2.20 The assessment of potential health effects for each of the three phases of development is summarised in Table 5-1.

Table 5-1 Assessment – Housing Quality and Design

Development Stage	Summary of Health Effects
Construction	There are no direct effects on housing quality and design as a result of construction of the proposed Development. A potential indirect effect may relate to take-up of local rental properties by members of the construction workforce, with a resultant increase in rental values / shortage of rental homes for local occupation. However, taking into account factors such as the scale of the regional construction workforce in the South East, the relatively mobile nature of construction workers and the duration over which the proposed Development is planned, the effects are considered to be **minor negative** overall.
Early occupation Operation	The health effects relating to housing quality and design are considered to be similar for both the early occupation and operational phases. The proposed Development would have a beneficial long-term impact on health through the provision of new housing. The range of housing types and tenures proposed cater for a range of lifestyles, income ranges and life stage, particularly including affordable housing provision and a range of accommodation to suit retired and elderly people. Vulnerable populations that may be affected positively include the elderly and low-income households. The Folkestone & Hythe district is home to a higher proportion of retired and elderly people than is the case for Kent as a whole. The proposed Development provides a mix of options for older people to meet a range of care needs, including large flats to appeal to 'down-sizers', a retirement village in close proximity to the new town centre, extra care housing with a range of levels of support from independent living to care packages, and a nursing home for those with higher care needs. The scale, range and quality of new housing proposed in addition, to the landscape led approach and open space, is considered to have a **major positive** impact on the health and well-being of both early occupiers and longer term residents.

5.3 Access to Healthcare Services and Other Social Infrastructure

5.3.1 This section considers the potential effects on health from access to healthcare services and other social infrastructure (for example education facilities and community services) from the construction, early occupation and operation of the proposed Development.

Evidence Review

5.3.2 Accessibility in planning is a central focus in the UK government's programme to improve social inclusion and reduce inequality[10]. Equal access to a range of both primary and secondary healthcare services can contribute to a reduction in health inequality. Primary care is a vital

[10] Langford, M. and Higgs, G., 2006. Measuring potential access to primary healthcare services: the influence of alternative spatial representations of population. *The Professional Geographer*, *58*(3), pp.294-306.

component of the healthcare system, with over 90% of all healthcare contact occurring in general practitioner (GP) premises; the availability and accessibility of these is therefore, paramount[11].

5.3.3 Access to social infrastructure and services such as health, education and community facilities has been found through research to have a direct positive effect on human health. Leisure activities for example, can have *a positive effect on people's physical, social, emotional and cognitive health through prevention, coping (adjustment, remediation, diversion), and transcendence'* [12].

5.3.4 Limited or disrupted access to amenities and services may adversely affect general physical health and wellbeing due to greater difficulties in travelling to the service or amenities and the increased stress caused by changes to journey duration, predictability and convenience (whether by foot, public transport or car). Vulnerable populations that may particularly be impacted include the elderly, children and people with disabilities.

5.3.5 Publications[13]reflecting on the lessons from previous development of new towns and settlements have identified the creation of community as a fundamental objective[14], but also highlighted the tendency for 'built environment' design and physical issues to dominate the planning process[15]. Case study evidence has shown that social facilities and community infrastructure are key requirements as mechanisms for building social capital and community support.

5.3.6 There is a suggestion that people are at risk of mental distress as a result of moving into new settlements (the so-called 'New Town Blues'). Evidence from the new settlement at Cambourne in Cambridgeshire revealed that mental distress was observed not only in socially disadvantaged people or people known to have mental illness, but across the social strata; the lack of informal meeting places in the town for a long time after the first residents had arrived was considered to be an important contributory factor[16].

5.3.7 The NPPF 2019 states that 'access to a network of high-quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities.'

5.3.8 Kent and Medway Growth and Infrastructure Framework (2017 Update)[17] notes there are variations in the causes of deprivation across the County, which include a lack of access to healthcare. An ageing population presents its own challenges and affects infrastructure demands; these challenges include changing requirements for house types to be more adaptable and the increasing need for better healthcare and accessible infrastructure.

5.3.9 The 2018 JSNA Exceptions Report for Kent highlights that older people are the fastest growing group of people in the County – from 2018 to 2023 Kent's population aged 65 years and over is estimated to grow at a faster rate (11.4%) compared to those aged less than 65 years (5.0%). The report notes that this is an age group with a high rate of limiting long-term illness and high service utilisation compared to other age groups, particularly hospital admissions and use of community services[18].

5.3.10 Publications by South Kent Coast CCG and Ashford CCG both refer to recruitment issues as key challenges facing primary healthcare. The South Kent Coast Operational Plan 2017-19 refers staffing issues such as growing reliance on agencies and locums and states that the CCG has lost 20 GPs over 30 practices in two years. The Ashford and Canterbury & Coastal CCGs Primary Care Operating Plan 2017-19 also refers to a need to recruit primary care staff across all levels[19].

[11] Todd, A., Copeland, A., Husband, A., Kasim, A. and Bambra, C., 2015. Access all areas? An area-level analysis of accessibility to general practice and community pharmacy services in England by urbanity and social deprivation. *BMJ open*, *5*(5), p.e007328.
[12] Caldwell, L.L. (2005) Leisure and health: Why is leisure therapeutic?
[13] Berkmann LF (1995). The role of social relations in health promotion. Psychosom Med, 57:245-254
[14] House JS (1988). Social relationships and health. Science, 241:540-545
[15] Goh, S. and Bailey, P., 2014. The effect of the social environment on mental health – implications for service provision in new communities.
[16] Ibid.
[17] Kent and Medway Growth and Infrastructure Framework (2018 Update)
[18] Kent County Council, Joint Strategic Needs Assessment Exceptions Report 2017/18 (March 2018)
[19] Quod, 2018. Community Infrastructure Delivery Strategy for Otterpool Park

5.3.11 There is strong evidence highlighting the importance of early development for physical, cognitive, linguistic health and for social skills. Therefore, investment in early years education is crucial, as well as sustained commitment. Success in education bring many advantages, including reducing social and health inequalities.

5.3.12 Beyond early years provision, continued appropriate education and training services and facilities are linked to ongoing health effects, whether this is associated with obtaining knowledge of health conditions and treatment, and awareness of healthy behaviours (for example in relation to smoking, drug and alcohol misuse or healthy eating).

Environmental Baseline

5.3.13 The Community Infrastructure Delivery Strategy produced by Quod to support the OPA provides information relating to education, healthcare and community centre provision in the vicinity of the proposed Development.

5.3.14 In terms of healthcare services, the Strategy identifies that there are currently five GP surgeries within 5km of the application Site boundary, with a total of 17 GPs and 28,289 patients. The nearest GP surgery to the Site is the Sellindge Surgery which currently has three GPs and 4,890 patients.

5.3.15 The average for the NHS South Kent Coast Clinical Commissioning Group (CCG) (which covers Folkestone and Kent as well as Dover and Deal) is 3,000 patients per FTE GP, while the average for the NHS Ashford CCG is 2,560 per FTE GP. By contrast, the average for the NHS South East region is 1,980 per FTE and GP and for England as a whole is 2,060 per FTE GP. Based on the NHS benchmark of 1,800 patients per GP for planning purposes, there is no surplus capacity for new residents in existing surgeries in the local area.

5.3.16 There are currently four pharmacies located within 5km of the Site (three in Hythe and one in Lyminge), together with two dentist surgeries (both of which are in Hythe).

5.3.17 The nearest hospitals are the William Harvey Hospital, Ashford and the Royal Victoria Hospital, Folkestone. The former operates an Accident and Emergency department (A&E) as well as a range of specialist care departments. The latter has a minor injuries unit as well as some specialist services including diagnostic services, mental health care, children's and adolescent services and other outpatient services. The East Kent Hospitals University NHS Foundation Trust (which is responsible for operating both hospitals) is currently examining ways of reorganising hospital care in East Kent and a number of options are due to be consulted on in 2019.

5.3.18 In terms of education, the Community Infrastructure Delivery Strategy identifies 10 childcare providers and 12 primary schools within 5km of the application Site boundary. The nearest schools to the site are Lympne Church of England Primary School and Sellindge Primary School. In terms of early years provision, the nearest childcare providers are Little Learners Pre-School in Sellindge and the Punch and Judy Play Group in Lympne. There are currently 12 secondary schools within both Ashford Borough Council (ABC) and Folkestone & Hythe District Council (FHDC). The closest school to the site is Brockhill Park Performing Arts College on the outskirts of Hythe.

5.3.19 Finally, there are several local community halls located in nearby areas. The two nearest halls are the Sellindge Village Hall and the Lympne Village Hall, run by Sellindge and Lympne Parish Councils respectively and available to hire for community uses. Sellindge Sports and Social club also hosts local activities. There are also places of worship belonging to multiple congregations, including several historic parish churches. Evidence from community consultation has demonstrated that the existing community halls are successful and popular.

Otterpool Park

5.3.20 The new population for Otterpool Park will generate a requirement for community infrastructure (notably education, healthcare and community facilities, and open space / play provision). This includes:

- up to 12,980 sqm of healthcare floorspace, including one large healthcare practice in addition to three other smaller sites allocated for potential health needs

- in terms of social care, Otterpool Park is expected to deliver up to 648 specialist homes for older people; the extended services at the new health centre are expected to include care services for older people
- a two class (54 pupil) nursery school located with every primary school (together with additional 5-6 private settings in flexible high street space subject to market demand)
- four 2FE primary schools and one 3FE primary school, with safeguarding of up to a further 3FE
- one 10FE secondary school, with additional Further Education provision offsite
- 250 further education places created as part of wider secondary schools
- nearly 8,000 sqm (Gross External Area) of flexible community use floorspace. The quantum has been calculated using a benchmark of 0.15-0.30 sqm per person (Quod 2018).

Assessment of Health Effects

5.3.21 The assessment of potential health effects for each of the three phases of development is summarised in Table 5-2.

Table 5-2 Assessment – Access to Healthcare Services and other Social Infrastructure

Development Phase	Summary of Health Effects
Construction	No healthcare or other social infrastructure facilities are planned to be affected by construction activities. Accessibility by car and bus to community services and facilities will not be affected during construction. The effect on vulnerable populations who may be more dependent on car use and public transport, including people with limited mobility, will therefore be minimised. Any disruption to access as a result of disruption to existing road or footpath networks would be temporary in nature and not significant. There is potential for increased demand on local healthcare services as a result of the presence of temporary construction workers, although this effect is anticipated to be minor given the long build out of the development meaning that the number of workers at the development at any particular time will not be significant. The construction phase of the development is anticipated to have a **neutral** impact on access to healthcare services and other social infrastructure.
Early occupation	The potential health implications of early occupation are primarily related to mental health issues; these can be associated with a lack of a sense of belonging, lack of opportunities for community interaction and stresses created by ongoing construction activity (for example noise or amenity issues). All age groups and backgrounds are potentially vulnerable to these issues. The design of the proposed Development provides opportunities for recreation and physical activity in close proximity to all dwellings, offering an accessible range of recreation and exercise options for future residents. Phasing of the proposed Development importantly incorporates opportunities for community interaction at the earliest stage – Phase 1 includes provision of education and community centre space. Sellindge Surgery is the closest existing surgery to the Site. The continued sustainability of Sellindge Surgery is very important and will be considered as part of any new provision at Otterpool Park. The early occupation phase of the development is considered to

Development Phase	Summary of Health Effects
	have a potentially **moderate negative** effect on access to healthcare services and other social infrastructure. The early provision of services and facilities and use of the Sellindge Surgery as outlined above as mitigation, together with management of construction impacts through the Code of Construction Practice (CoCP) are anticipated to mitigate against further negative impacts. Otterpool Park provides a significant opportunity for a GP practice with extended services. The exact model for delivering these services will depend on the strategic plans, objectives and funding available to the Clinical Commissioning Groups at the time of detailed planning permission and delivery. The delivery model could be a Multispeciality Community Provider (MCP) or a Treatment Centre. It is expected that, whatever model the healthcare offer might take, it will also include dentists, opticians and pharmacies in a mixture of private and NHS settings according to the NHS licencing programme for these facilities (which includes an up to date needs assessment).
Operation	The exact model for phasing a new health centre at Otterpool Park has not been decided at this early stage and will be the subject of discussion and agreement between the Applicants, FHDC and the CCGs as part of the Section 106 agreement. However, the need to provide early years healthcare provision is acknowledged. There are beneficial health impacts from the opportunities provided by increased social interaction presented by new community provision, and education opportunities for local residents provided by the new schools and early years provision. Vulnerable populations that may benefit from new facilities include children and the elderly. Overall the impacts are likely to be beneficial and long-term; the provision of new education opportunities will have a positive effect, as will the provision of new opportunities for social interaction. The health effects arising from access to healthcare services and other social infrastructure are considered to be **major positive**.

5.4 Access to Open Space and Nature

5.4.1 This section considers the potential effects on health from changes in access to open space and nature associated with the construction, early occupation and operation of the proposed Development.

Evidence Review

5.4.2 Public amenities such as parks, recreational facilities and social and cultural services benefit the well-being of local residents, providing opportunities for health-promoting activity, physical exercise, and meeting-places[20]. The spatial distribution of public services and facilities has the potential to reduce inequality between neighbourhoods.

[20] Koohsari, M.J., Mavoa, S., Villanueva, K., Sugiyama, T., Badland, H., Kaczynski, A.T., Owen, N. and Giles-Corti, B., 2015. Public open space, physical activity, urban design and public health: Concepts, methods and research agenda. *Health & Place*, *33*, pp.75-82.

5.4.3 A note published by the Parliamentary Office of Science and Technology (POST) in 2016 stated that areas with more accessible green space are associated with better mental and physical health, although there are challenges to the provision of green spaces and funding both their creation and maintenance. Research undertaken by the Fields in Trust charity (who seek to protect parks and green spaces) highlights that parks and green spaces across the UK provide people with over £34 billion of health and wellbeing benefits.

5.4.4 Studies have shown that exposure to the natural environment, or green space, has an independent effect on health and health-related behaviours. Access to green space can affect health by inducing beneficial physical activity and by ameliorating stress levels. Accessibility to greenspace contributes both to increases in physical activity and improved social cohesion through increased interaction. Proximity to parks and recreational settings are associated with greater levels of physical activity[21]. In addition, safety provision, aesthetics, maintenance and amenities are also important attributes in supporting physical activity[22]. Reducing or disrupting access to green space may therefore have negative health consequences.

5.4.5 The Landscape Institute produced a position statement relating to 'Public Health and Landscape' in 2013. The statement noted many examples of the important role the natural environment in terms of reconnecting communities with green spaces, the use of green space to treat mental illness and break drug dependency, and as a means of providing therapeutic benefit for illnesses such as dementia[23].

Environmental Baseline

5.4.6 The Shepway Open Space Strategy published in 2017 identifies existing open space provision, stating that the quality and value of publicly accessible open space across the former Shepway District is relatively good, with a greater quantity of open space than surrounding local authorities. The Shepway Play Area Review (June 2017) was prepared to help define the desired level of play provision across the District in terms of quantity, quality and accessibility. The review highlights that the western half of the District away from the more densely populated coastal towns experiences some lack of play provision. Ten wards within the District fail to meet the Fields in Trust (FiT) quantity benchmark with regard to the provision of play areas, including Hythe and North Downs West (wards within which the proposed Development sits).

5.4.7 There are 11 PRoW that dissect the application Site. A PRoW survey was undertaken in April 2018 to determine condition of these routes and from that to identify likely level of recreational usage. The survey identified a relatively low level of usage of these routes, and primarily for local uses such as dog walking / fitness purposes.

5.4.8 The Royal Military Canal stretches in an east-west direction between the western edge of Folkestone and the northern edge of Rye and is approximately 3km to the south of the Site. The footpath along the canal has been upgraded at West Hythe to enable use by cyclists and equestrians in addition to pedestrians; over 61,000 visits were recorded along the new route in a thirteen-month period. The Saxon Shore Way follows the route of the Royal Military Canal in this location.

5.4.9 To the south of the Site is the Kent Downs Area of Outstanding Natural Beauty (AONB). A visitor survey undertaken by the AONB Unit identified that the main motivations for visiting the Kent Downs are for its beauty and tranquillity, with walking being the main activity. Key routes within the AONB include the North Downs Way National Trail, a long-distance footpath extending through Surrey to Dover and which is 156 miles in length. Sections of the route nearest to the proposed Development extend from the town of Wye to Dover, passing along the Etchinghill Escarpment. Other walks and trails in the vicinity of the Site include the Tolsford Trek, which links the Elham Valley Way, Saxon Shore Way and North Downs Way.

[21] Koohsari, M.J., Mavoa, S., Villanueva, K., Sugiyama, T., Badland, H., Kaczynski, A.T., Owen, N. and Giles-Corti, B., 2015. Public open space, physical activity, urban design and public health: Concepts, methods and research agenda. *Health & Place*, *33*, pp.75-82.
[22] McCormack, G.R., Rock, M., Swanson, K., Burton, L. and Massolo, A., 2014. Physical activity patterns in urban neighbourhood parks: insights from a multiple case study. *BMC public health*, *14*(1), p.962.
[23] Landscape Institute, 2013. Public Health and Landscape – Creating Healthy Places.

5.4.10 Further afield from the Site is the Dungeness complex (including Romney Marsh and Rye Bay). The area receives a high number of visitors, approximately 550,000 visits are made per annum, with the RSPB reserve receiving approximately 30,000 visitors.

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5.4.11 The population generated as a result of the proposed Development will create additional demand for play areas, recreational open space and sports facilities. A range of open space, sports and play area provision has been incorporated into the masterplan design, notably:

- Sports playing pitches (25.9 ha)
- Children's play space (6.1 ha)
- Strategic parks (7.8 ha)
- Allotments / orchards (7.2 ha)
- General amenity space (39.8 ha)

5.4.12 In addition to the above, there are opportunities to utilise shared provision of school playing fields (a further 11.8 ha). The precise configuration of open space is subject to detailed design at the reserved matters stage having regard to the Parameter Plans and Design Guidelines.

5.4.13 The incorporation of green infrastructure, open space and a variety of habitats and landscapes forms an intrinsic part of the design of Otterpool Park, including:

- a variety of woodlands, wetlands, meadows, allotments, recreation areas all connected by green corridors with retained trees, hedgerows and water courses
- a landscaped green open space to create a setting for Westenhanger Castle
- creation of a Woodland Country Park on the upper slopes of the Site between Harringe Brook Woods, Otterpool Manor and Upper Otterpool Farm provides an opportunity to create an open space for recreation with links to existing woodland parks and the Saxon Way Walk to the east and south
- use of the East Stour River corridor to incorporate both formal and informal walking and cycling routes connecting areas of open space and leisure / sports provision
- creation of a landscape buffer between the proposed Development and the village of Lympne, with opportunities here for informal recreation, walking and horse-riding
- a Heritage Trail is also proposed within the Site, linking features of interest including the World War II pill box, Lympne Airfield features, the Bronze Age barrows at Sellindge and Westenhanger Castle.

Assessment of Health Effects

5.4.14 The assessment of potential health effects for each of the three phases of development is summarised in Table 5-3.

Table 5-3 Assessment – Access to Open Space and Nature

Development Stage	Summary of Health Effects
Construction	Public footpaths within the application boundary are planned to remain operational during the construction of the proposed Development. Any disruption to the existing road and footpath networks during construction, thereby impacting upon access to open space and nature, would be temporary in nature and any health impact is thereby considered to be **negligible** and not significant.
Early occupation	During the early build out of the development, open space provision is planned to be delivered alongside new homes, services and

Development Stage	Summary of Health Effects
	facilities. Notably, it is proposed that the town park proposed to the south of Westenhanger Castle is developed in the first five years. The effects during early occupation are therefore regarded to be the same as during operation providing a significant **major positive** health benefit to residents. The masterplan proposals have been designed to complement and, where possible, enhance existing PRoW and bridleways within the application Site and to link in with external routes adjoining the Site. Proposed new walking and cycling routes will link into the existing footpath network. As such, existing PRoW and bridleways are expected to experience an increase in usage levels due to increased accessibility and an increase in local population.
Operation	The incorporation of green infrastructure, open space and a variety of habitats and landscapes forms an intrinsic part of the design of Otterpool Park. There is likely to be a beneficial and long-term impact on health and well-being as a result of improved access to open space and nature from the proposed Development. Vulnerable populations that may particularly benefit from this effect include children and low-income households, through the creation of walkable neighbourhoods and improved footpath links. The health impact is thereby considered to be **major positive** for access to open space and nature.

5.5 Accessibility and Active Travel

5.5.1 This section considers the potential effects on health as a result of accessibility and active travel associated with the construction, early occupation and operation of the proposed Development. The topic covers a range of issues, including walking and cycling, access to public transport, and road safety.

Evidence Review

5.5.2 Walking and cycling are physical activities used to travel to a particular destination (for example shops, community facilities, school or work), to access public transport, and for recreational purposes. A supportive environment for physical activity is a decisive factor in stimulating uptake of walking and cycling – for example the mix of land-uses and connectivity between areas as well the presence and condition of dedicated footways and cycle routes.

5.5.3 Increased walking and cycling in urban environments with reduced use of private vehicles has many positive effects on both health and the environment through increased physical activity, improvements in air quality and noise pollution, reduction in congestion and CO_2 emissions.

5.5.4 The use of public transport generally involves some walking or cycling to bus stops or train stations. A range of 8-33 additional minutes of walking is attributed to public transport use. A greater uptake of public transport by inactive adults is likely to lead to significant increases in the adult population considered sufficiently active[24].

[24] Fraser SDS, Lock k. Cycling for transport and public health: a systematic review of the effect of the environment on cycling. The European Journal of Public Health 2011; 21(6); 738-43. http://eurpub.oxfordjournals.org/content/21/6/738

5.5.5 Physical inactivity is one of the most important health challenges currently facing the UK population. Health agencies generally recommend 30 minutes or more of moderate-intensity physical activity on most days of the week for good health[25].

5.5.6 Regular physical activity helps to prevent obesity and being overweight and also reduces the risk of many chronic conditions including coronary heart disease, stroke, type 2 diabetes, cancer and musculoskeletal conditions[26]. There is evidence that physical activity can be beneficial for those with mental health problems, reducing depressive symptoms and increasing quality of life[27].

5.5.7 Creating an environment where people actively choose to walk and cycle as part of everyday life can have a significant impact on public health and may reduce inequalities. For the elderly: safety, street connectivity and the availability of good pedestrian access will influence pedestrian travel as a preferred mode of travel. There is also a link between socio-economic grouping, health and active travel. For example, there are inequalities in obesity rates between different socio-economic groups – research shows that among children in reception and Year 6, the prevalence of obesity in the 10% most deprived groups is approximately double that in the 10% least deprived[28]. Encouraging active travel within these socio-economic groups can thereby improve health.

5.5.8 Using active travel as a means of getting to work or school, in particular, is associated with significant improvements to cardiovascular health and reductions in levels of obesity[29].

5.5.9 There is a plethora of research highlighting the positive impacts of travel policies and intervention methods to promote walking and cycling. Recent literature indicates that promotional campaigns, changes in physical infrastructure and shifting travel behaviours are the most effective at creating long-term change[21]. Health impact modelling of active travel in England and Wales has evaluated the health and environmental impacts of high walking and cycling transport scenarios for urban areas outside London. The findings of the research included that *'moving urban trips from car travel to walking and cycling can provide substantive benefits to population health and reduce transport related greenhouse gas emissions. The largest benefits are likely to be from changes to physical activity. The study suggests that total injuries need not go up with increased walking and cycling as long as there are sufficient reductions in motor vehicle distance and lower motor vehicle speeds'*[30].

5.5.10 Public Health England (2016)[31] have provided a briefing note for local authorities on promoting active travel. The guide looks at the impact of current transport systems and sets out the many benefits of increasing physical activity through active travel. It suggests that while motorised road transport has a role in supporting the economy, a rebalancing of our travel system is needed.

5.5.11 Travel behaviour can also be affected by factors associated with the design and layout of development, for example the density, mix of uses and accessibility of travel infrastructure. Higher residential densities, varied land uses, and permeable neighbourhood form are consistently associated with higher public transport use, a greater propensity to walk and a lower propensity to drive[32]. One study consisting of 11 countries, found that when adults reported having appropriately located shops, public transport, pavements, bicycle facilities and recreational facilities they were 20-50% more likely to meet physical activity guidelines than if they lacked these amenities.

5.5.12 Poor public transport provision can lead to social exclusion, contributing negatively to quality of life and health and equality of outcome. Vulnerable populations that may be affected by poor public

[25] Haskell WL, Lee IM, Pate RR, Powell KE, Blair SN, Franklin BA, et al. Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. Circulation 2007;116: 1081–93.
[26] Public Health England, Obesity and the environment: increasing physical activity and active travel, November 2013
[27] Rosenbaum S, Tiedemann A, Sherrington C, Curtis J, Ward PB. Physical activity interventions for people with mental illness: a systematic review and meta-analysis. J Clin Psychiatry 2014; 75(9): 964-74. 10.4088/JCP.13r08765
[28] Public Health England, Obesity and the environment: increasing physical activity and active travel, November 2013
[29] XU h, Wen LM, Rissel C. The relationships between active transport to work or school and cardiovascular health or body weight: a systematic review of the relationship between the built environment and physical activity among adults. Int j Bhav Nutr Phys Act 2001; 8; 125.10.1186/1479-5868-8-125.
[30] The Public Library of Science (PLOS) 2013 Health Impact Modelling of Active Travel Visions for England and Wales Using an Integrated Transport and Health Impact Modelling Tool (ITHIM)
[31] Working Together to Promote Active Travel: A briefing for local authorities
[32] https://www.healthyplaces.org.au/userfiles/file/Mixed%20Land%20Use%20June09.pdf

transport provision include children and young people, the elderly, those without access to a car, people on low-incomes and women presenting a barrier to jobs, health services, education, shops and other services[33].

5.5.13 The vulnerability of older adults increases with reduced mobility. The provision of safe travel options (public and private) that allow easy access to services and amenities is a vital factor in maintaining mobility amongst older road users[34]. Difficulties in using public transport can limit older people's participation in society, thereby impacting negatively on their health[35]. Barriers created by transport are important for healthcare access, particularly for those with lower incomes. They can lead to rescheduled or missed appointments, delayed care, and missed or delayed medication use.

Environmental Baseline

5.5.14 Folkestone & Hythe District Council's Places and Policies Local Plan Draft identifies the heavy dependency on the private car, and the need to promote development which reduces car dependency, by ensuring employment opportunities, health services, educational facilities, shops and recreational opportunities are accessible by foot, cycle and public transport.

5.5.15 The Kent PRoW Improvement Plan (2018) aims to provide a high quality, well-maintained PROW network, that is well used and enjoyed, thereby supporting the Kent economy and encouraging active lifestyle and sustainable travel choices[36]. Kent's Active Travel Strategy (2017) aims to make active travel an attractive and realistic choice for short journeys in Kent, by developing and promoting accessible, safer and well-planned active travel opportunities.

5.5.16 The existing walking and cycling network across the site and in the local area is detailed within the Environmental Statement which accompanies the OPA. A summary of the existing walking and cycling provision along key routes within the site is as follows:

- footpath provision along the A20 Ashford Road varies and there us a lack of formal pedestrian crossing facilities along its length with the exception of a signalised pedestrian crossing on the southern arm of the junction with Otterpool Lane. There is no infrastructure provided for cyclists.
- there are no formal footpaths on either side of Otterpool Lane. With the exception of the signal-controlled pedestrian crossing at the junction with the A20, there are no pedestrian crossing facilities or traffic calming measures along the length of the road.
- Stone Street provides access for pedestrians and cyclists to Lympne. A footpath is provided on at least one side of the road for its entire length.
- there is no footway provision along the length of the A261 Hythe Road until it meets Aldington Road.

5.5.17 The coastal National Cycle Network Route 2 lies approximately 1km south of the southern boundary of the site and is a popular long-distance recreational route following the English Channel coastline.

5.5.18 A Walking and Cycling Study[37] was commissioned by Folkestone & Hythe District Council in 2018 to investigate the current walking and cycling environment in the area and consider improvements that would complement the Otterpool Park masterplan proposals.

5.5.19 In terms of public transport, there is a regular bus service (service 10/10A) between Folkestone and Ashford which runs on an hourly basis along the A20 from Monday to Saturday and at two hourly intervals on a Sunday. Other routes run less regularly (for example the 111 service operates on a Thursday only, between Ashford and Folkestone via Aldington and Burmarsh). The 994 and 18A

[33] Thomson H, Jepson R, Hurley F, Douglas M. Assessing the unintended health impacts of road transport policies and interventions: translating research evidence for use in policy and practice. BMC Public Health 2008; 8:339. 10. 1186/1471-2458-8-339

[34] Oxley J, Whelan M. It cannot be all about safety: the benefits of prolonged mobility. TrafficInjPrev 2008; 9(4): 367-78. 10.1080/15389580801895285.

[35] Broome K, McKenna K, Fleming J, Worrall L. Bus use and older people: a literature review applying the Person-Environment-Occupation model in macro practice. Scandinavian Journal of Occupational Therapy 2009; 16(1): 3-12. 10.1080/11038120802326222.

[36] https://consultations.kent.gov.uk/consult.ti/rightsofWayImprovementPlan2017/consultationHome

[37] *Otterpool Park Garden Town, Kent Walking and Cycling Study (Mott Macdonald, August 2018).*

runs daily, once in the morning and returns in the afternoon, taking local children to and from schools in Folkestone and Canterbury and only operates on school days.

5.5.20 Westenhanger Railway Station, located in the north-eastern corner of the site area, is strategically located on the South-Eastern Railway Line connecting Ashford and Dover. The station is unstaffed and facilities at the station are limited with no waiting room or cycle parking facilities and limited accessibility for the mobility impaired. Services include hourly (two trains an hour at certain times) southbound services into Folkestone. Northbound, there is a half hourly service to Ashford, from where high speed Eurostar (HS1) as well as regular services to London depart.

5.5.21 Personal Injury Accident (PIA) data has been obtained from KCC for a period of five-years, up until 30th August 2017. The data shows that a total of 117 recorded accidents took place within the study area over the five-year period. Of those, the vast majority of accidents, totalling 101, were of slight severity, 13 serious and three of which fatal. Interrogation of the accident data shows that during the study period two accidents involved a pedestrian, three involved pedal cyclists, 15 involved motorcyclists, six involved Light Goods Vehicles (LGV) and 18 involved a Heavy Goods Vehicle (HGV).

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5.5.22 The Otterpool Park development and associated access and travel strategy will provide residents, employees and visitors with an attractive and comprehensive network of sustainable travel opportunities to provide viable alternatives to travel by private car.

5.5.23 The Transport Strategy for Otterpool Park includes the following principles of relevance to accessibility and active travel:

- create walkable neighbourhoods and a high street highly accessible by walking and cycling
- provide strong walking, cycling and bus connections to the rail station, employment, high street, local centres and schools from the residential areas
- provide connectivity by walking, cycling and bridleways into the surrounding countryside and existing communities
- ensure a high level of connectivity to and from Otterpool Park within the sub-region by frequent and high-quality public transport
- provide for parking requirements for cars and bicycles
- implement a range of sustainable travel behavioural measures to encourage use of sustainable modes.

5.5.24 The design of the proposed Development provides for walkable neighbourhoods, with the majority of all homes within easy walking or cycling distances of facilities and services, as follows:

- 400 metres of a LEAP (local play area)
- 700 metres of a MUGA (multi use games area)
- 800 metres of a primary school and local centre
- 1,000 metres of allotments and community orchards, sports pitches and a NEAP (neighbourhood play area).

5.5.25 Walkable neighbourhoods create the opportunity for containing trips within the site and for achieving high levels of walking and cycling usage.

5.5.26 The aim of the walking and cycling strategy is to create a highly connective and permeable network of routes that support the anticipated high-demand from the resident and working Otterpool Park population, whilst bringing benefits to the existing populations in adjacent settlements and leisure users of existing footpaths and bridleways.

5.5.27 All walking and cycling routes will be of a high-quality with all-weather surfacing, well-lit and easily maintained. Routes will be through green spaces, along the river corridor, or on well-designed

streets to make them a more attractive option and more direct than using the car. The layout of homes and routes will ensure natural surveillance to increase user safety.

5.5.28 In relation to public transport, the strategy is to provide an accessible, frequent and reliable service for residents of Otterpool Park to connect to local destinations including local centres, schools, employment sites and Westenhanger Station, and to wider destinations such as Ashford and Hythe.

5.5.29 Bus stops are planned within 400 metres of the majority of homes. Bus service provision is proposed at 30-minute frequencies from early occupation. By the time of full development, it is envisaged that there would be a 15-minute frequency service, increasing to every 10 minutes once fully commercial. During early occupation enhancement to existing services would take place, with additional buses added to increase the frequency and provide a bus service through the development.

Assessment of Health Effects

5.5.30 The assessment of potential health effects on accessibility and active travel for each of the three phases of development is summarised in Table 5-4.

Table 5-4 Assessment – Accessibility and Active Travel

Development Stage	Summary of Health Effects
Construction	There may be potential impacts on pedestrian amenity and public safety due to the increase in vehicle flows and the change in flow composition i.e. an increase in heavy goods vehicles travelling to and from site. Construction traffic will be restricted from travelling past schools and where this is not possible, vehicles will be restricted during start and closing times. A Construction Traffic Management Plan would be produced to mitigate effects, effectively routing construction vehicles away from sensitive residential areas where possible. The effects during this stage are considered to be **minor negative** and therefore not significant.
Early occupation	Bus routes will be developed through the build out of the development in conjunction with bus operators. An improved walking and cycling connection along the A20 will be provided as part of the early build out of the development. Walkable neighbourhoods will be created from the outset. The effects during this stage are considered to be **minor positive** and therefore, not significant.
Operation	Pedestrian severance occurs when there is difficulty experienced in crossing a heavily trafficked road; the transport chapter of the Environmental Statement identifies ten road links that are expected to experience a 30% or greater traffic flow increase. For affected links, mitigation measures are proposed to reduce severance and improve pedestrian amenity as necessary, including where dedicated pedestrian crossing facilities such as zebra or signalised crossings are provided on key desire lines, such as the walk from Lympne to the Village Hall. The accessibility of Otterpool Park on foot and bicycle has been assessed using TRACC software, by considering distances reached by walking and cycling modes for appropriate timescales from the centre of the site. The modelling showed that the majority of the Otterpool Park site is within a 20-minute walk (approximately 1.6km) and areas of Sellindge and Lympne within a 30-minute walk (approximately 2.4km) of a node. The majority of Otterpool Park is accessible within a 15-minute cycle. A threshold of up to 30 minutes is shown to extend to Folkestone and Hythe, including

Development Stage	Summary of Health Effects
	National Cycle Network Route 2. A 45-minute cycle accesses National Cycle Network Route 18 and the regional network to Canterbury. The gradients in the wider area are however recognised, which may restrict the ability of all but the most able to walk or cycle from the proposed Development to some destinations in the wider area, Due to the emphasise on accessibility and active travel the proposed Development could potentially offer the rental of electric bicycles; to further promote cycling, and widen the use of bicycles to those less able. The proposed Development incorporates new footpaths and cycleways, including links with the existing network of Public Rights of Way, thus enabling the local population to walk and cycle to local destinations, including links with nearby residential areas, through the creation of a range of safe, secure routes. The provision of regular public transport from well-planned and located bus stops, will enable local residents to make sustainable travel choices and reduce dependence on the private car. Vulnerable populations that may benefit particularly include young people, through the provision of appropriate walking and cycling routes to school and community facilities. The proposed development would therefore have a **moderate positive** long-term impact on the health of local residents, by virtue of improvements in accessibility and active travel.

5.6 Crime Reduction and Community Safety

5.6.1 This section considers the potential effects on health as a result of changes in crime and community safety associated with the construction, early occupation and full operation of the proposed Development.

Evidence Review

5.6.2 It is widely reported that the fear and perception of crime varies for persons of different genders[38], age[39] and level of deprivation[40]. One of the lesser documented factors affecting a person's sense of vulnerability and fear of crime is income inequality[41]. Residents living in high-rise or low-rise dwellings are less likely to be fearful of crime while in their home, due to the physical and social distance provided by the dwelling from the wider area[42].

5.6.3 Fear of crime and perception of safety can be an important factor influencing people's daily lives – for example their travel choices. Women typically experience greater levels of concern over personal safety than do men and are more likely to avoid open spaces for example. Personal safety may also affect decisions to walk or cycle. This has implications for public health directly (fear of crime) and indirectly (decrease in active lifestyle).

[38] Snedker, K.A., 2015. Neighbourhood conditions and fear of crime: A reconsideration of sex differences. Crime & Delinquency, 61(1), pp.45-70

[39] Greve, W., Leipold, B. and Kappes, C., 2017. Fear of crime in old age: a sample case of resilience? The Journals of Gerontology: Series B.

[40] Barrington, W.E., Stafford, M., Hamer, M., Beresford, S.A., Koepsell, T. and Steptoe, A., 2014. Neighbourhood socioeconomic deprivation, perceived neighbourhood factors, and cortisol responses to induced stress among healthy adults. Health & place, 27, pp.120-126

[41] Vauclair, C.M. and Bratanova, B., 2017. Income inequality and fear of crime across the European region. European journal of criminology, 14(2), pp.221-241

[42] Rollwagen, H., 2016. The relationship between dwelling type and fear of crime. Environment and Behavior, 48(2), pp.365-387.

5.6.4 'New urbanism' – widely advocated across planning policy – is expressed through high quality design principles promoting pedestrian friendly, mixed-used developments which are reported to provide other social and wellbeing benefits including enhanced safety from crime. One 2016 study concluded that following new urbanism policy compliance the overall level of crime reduced, highlighting that planning policy can indeed deliver social and wellbeing benefits for residents of new developments such as reduced crime levels and perceived fear of crime, although it is acknowledged that the extent of change is variable[43].

Environmental Baseline

5.6.5 The Kent Police website identities crime and community safety statistics for the area[44]. A review of crime maps for neighbourhoods in the vicinity of the proposed Development has shown that the number of recorded incidents is relatively low in this area and has not changed significantly over the last three years. Local policing priorities for the Ashford and former Shepway areas include: support for domestic abuse victims, to reduce drug related incidents and decrease anti-social behaviour and hate crime.

5.6.6 A review of crime maps provided by Kent Police for neighbourhoods in the vicinity of the proposed Development revealed that existing levels of crime are relatively low in areas outside of the main towns and settlements. Table 5-5 shows the number of incidents by area for October 2018 – the number of incidents in the same month in previous years has remained roughly similar.

Table 5-5 Crime Incidents by Neighbourhood

Neighbourhood	Number of Reported Incidents (October 2018)
Shepway – Lympne and Stanford	11
Shepway – Hythe West	22
Shepway - Central	47
Shepway – North Downs West	30
Ashford – Saxon Shore	25

5.6.7 Folkestone & Hythe District has a higher proportion of residents aged 45-64 and retired population than is the case for other areas; older population groups can feel a greater sense of vulnerability in relation to community safety and fear of crime.

5.6.8 Detailed guidance on issues of security and safety in the public realm can be found in various national and local policy documents (for example the Kent Design Guide Supplementary Planning Document (SPD) (2005/06)). At national level, the NPPF (2019) notes that crime, disorder and fear of crime has the potential to undermine quality of life and community cohesion. Further advice and guidance is provided by the Safer Kent initiative, a partnership between the police, local authorities, the fire service and health authorities.

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[43] Foster, S., Hooper, P., Knuiman, M., Bull, F. and Giles-Corti, B., 2016. Are liveable neighbourhoods' safer neighbourhoods? Testing the rhetoric on new urbanism and safety from crime in Perth, Western Australia. Social Science & Medicine, 164, pp.150-15

[44] https://www.kent.police.uk/your-area/ashford-and-shepway/

5.6.9 The proposed Development will be designed in such a way as to reduce crime and the fear of crime through appropriate design, security and landscaping measures, including well-lit public realm and the positioning of buildings to ensure the natural surveillance of public areas and routes.

5.6.10 Specifically, the Design and Access Statement which accompanies the OPA states that:

- the layout of homes and routes will ensure natural surveillance to increase user safety
- appropriate lighting will be provided for key routes and green space areas
- 'healthy homes' will have safe and secure home environments
- parking within development blocks will be within well-defined areas with good surveillance from dwellings. Areas will be overlooked by properties in order to increase perceived and actual safety
- community routes and footpaths should meander through a variety of environments, should offer the user a varied experience of the landscape and should increase activity and natural surveillance where beneficial.

Assessment of Health Effects

5.6.11 The assessment of potential health effects on crime reduction and community safety for each of the three phases of development is summarised in Table 5-6.

Table 5-6 Assessment – Crime Reduction and Community Safety

Development Phase	Summary of Health Effects
Construction	The presence of a construction workforce for a major project can have an impact on the existing community as a result of the mistrust/fear of workers, fear of increased crime rates/antisocial behaviour. Vulnerable populations include the elderly for whom fear of crime may be heightened during the construction phase, thus having a potential effect of mental well-being. The Code of Construction Practice (CoCP) prepared for the project would include information about construction activities and how this will be communicated to existing residents. The CoCP would also include information about mitigation measures that may assist with promoting an enhanced feeling of security during the construction phase (for example ensuring construction areas are well-lit). During the construction phase, the proposed Development is considered to have a **minor negative** effect on the health of local residents and therefore, not significant.
Early occupation	During early occupation, there is the potential for an increase in anti-social behaviour as a result of several factors – there may be a perceived 'lack of things to do' for younger populations, combined with a lack of community cohesion in the very early phases. The phasing of the proposed Development is such that a proportion of play space, strategic park provision and playing fields are provided during Phase 1. Equally, provision of community space and primary school provision (which has an important role to play in terms of developing community cohesion through provision of a social network) takes place during Phase 1. Construction will continue throughout the early occupation period, and therefore the issues associated with fear of crime and construction activities highlighted earlier are likely to continue, mitigated through measures outlined in the CoCP. As a result of these combined factors, the proposed Development

Development Phase	Summary of Health Effects
	could potentially have a **minor negative** effect on the health of new and existing local residents during the initial early occupation phase, although this is likely to improve over time.
Operation	The incorporation of good design into the proposed Development will ensure that crime and the fear of crime of crime is minimised through a variety of measures. This will potentially lead to health benefits for both new and existing local residents who should feel able to access open space and make healthy travel choices due to a perception of safety in their local environment. Over time, community cohesion and the development of social networks will contribute to feelings of community safety. The proposed Development is therefore likely to have a **moderate positive** effect on the health of new and existing residents making it significant.

5.7 Access to Healthy Food

5.7.1 This section considers the health implications of the proposed Development on access to healthy food, during construction, early occupation and operational phases.

Evidence Review

5.7.2 One of the key determinants that affect people's healthy eating and food choice is the local food environment. This includes factors such as the physical distance to access food – restricted physical access disproportionately acts as a barrier for low-income social groups. Studies have shown that for low-income groups the main purchase of food is from walkable areas, preferred due to lower transportation costs. More deprived areas also exhibit fewer healthy food sources, in terms of choice of food retail outlets[45][46].

5.7.3 Research has shown that, with only improved accessed or proximity to healthy food sources, food buying behaviour did not alter nor did changes to healthy food intake[47][48]. Whilst UK policy has placed an importance on increasing the accessibility of healthy food options, this alone is unlikely to have the desired effect of increasing healthy food intake and reducing obesity.

5.7.4 Another barrier to healthy eating for low-income households is food prices. Energy dense foods are generally cheaper than healthy alternatives[49], which may alienate sections of the population from accessing the latter. There is also a strong association between deprivation and the density of fast food outlets.

5.7.5 Obesity is a current global pandemic which has been increasing rapidly since the 1980s[50]. This trend is particularly prevalent within developed countries, affecting all socio-economic groups. However, the highest rates of increase have been observed in the most disadvantaged social groups[51].

[45] Cobb, L.K., Appel, L.J., Franco, M., Jones-Smith, J.C., Nur, A. and Anderson, C.A., 2015. The relationship of the local food environment with obesity: a systematic review of methods, study quality, and results. Obesity, 23(7), pp.1331-134
[46] Burgoine, T., Forouhi, N.G., Griffin, S.J., Wareham, N.J. and Monsivais, P., 2014. Associations between exposure to takeaway food outlets, takeaway food consumption, and body weight in Cambridgeshire, UK: population based, cross sectional study. Bmj, 348, p.g1464
[47] Cummins, S., Flint, E. and Matthews, S.A., 2014. New neighbourhood grocery store increased awareness of food access but did not alter dietary habits or obesity. Health affairs, 33(2), pp.283-291.
[48] Dubowitz, T., Ghosh-Dastidar, M., Cohen, D.A., Beckman, R., Steiner, E.D., Hunter, G.P., Flórez, K.R., Huang, C., Vaughan, C.A., Sloan, J.C. and Zenk, S.N., 2015. Diet and perceptions change with supermarket introduction in a food desert, but not because of supermarket use. Health Affairs, 34(11), pp.1858-1868.
[49] Story, M., Kaphingst, K.M., Robinson-O'Brien, R. and Glanz, K., 2008. Creating healthy food and eating environments: policy and environmental approaches. Annu. Rev. Public Health, 29, pp.253-272.
[50] http://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight

5.7.6 The relationship between food environments and obesity levels has produced a range of results indicating both positive, negative and null associations[52]. Studies undertaken from a residential perspective have described how deprived food environments appear to encourage an excessive energy intake and weight gain in the medium and long term, especially in those residents whose mobility is limited because of health or transport access[53][54].

5.7.7 The Kent Healthy Weight Strategy (2015) identifies the risk of obesity and the health implications for reduction in life expectancy, health cost and social care cost over the next ten to twenty years. Theme 1 of the Strategy requires action on the environmental and social causes of unhealthy weight from improvements to housing, the built environment and open space and parks.

5.7.8 Public Health England's Healthy People, Healthy Place briefing on obesity and the environment (2013) considers the implications of fast food outlets in particular and recommends reducing the proximity of fast food outlets to schools, colleges, leisure centres and other places where children and young people gather. Improving the quality of the food environment around schools has the potential to influence children's food-purchasing habits and thereby longer-term lifestyle choices.

5.7.9 The Retail Impact Assessment prepared for the proposed Development has considered centres within a ten minute drive time of the site. The centres of Folkestone, Hythe and Cheriton each have a number of public houses and A3 units, including cafes and takeaways. The major food stores are:

- **Folkestone** – Asda (Bouverie Place), Sainsbury's (Bouverie Road West) and Lidl (Shellons Street).
- **Hythe** – Sainsbury's (Military Road), Waitrose (Prospect Road) and Aldi (High Street).
- **Out-of-centre Food stores** - Tesco (Cheriton High Street), Sainsbury's (West Park Farm) and Morrisons (Cheriton Road – whilst noting that the store was subject to a major fire in November 2018).

5.7.10 The village of Lyminge includes a limited number of eating / drinking establishments, including two takeaway outlets, a bakery and coffee shop.

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5.7.11 The proposed Development incorporates a small to medium sized food store (2,000 – 2,500m^2 gross floor area), together with provision of smaller local stores to meet walk-to requirements of the nearby residential community. All homes are planned to be within 800 metres of a local centre, each of which will include a range of retail and food shopping and thereby accessible food buying locations. The design of the proposed Development is such that trips beyond the settlement to undertake regular food shopping should not be necessary.

5.7.12 The development specification also includes provision of 7.2ha of allotments and community orchards, predominantly in the south and eastern areas of the proposed Development.

Assessment of Health Effects

5.7.13 The assessment of potential health effects for each of the three phases of development is summarised in Table 5-7.

Table 5-7 Assessment – Access to Healthy Food

[51] Pacheco, A.F., Balam, G.C., Archibald, D., Grant, E. and Skafida, V., 2018. Exploring the relationship between local food environments and obesity in UK, Ireland, Australia and New Zealand: a systematic review protocol. BMJ open, 8(2), p.e018701.
[52] Feng, J., Glass, T.A., Curriero, F.C., Stewart, W.F. and Schwartz, B.S., 2010. The built environment and obesity: a systematic review of the epidemiologic evidence. Health & place, 16(2), pp.175-190.
[53] Short Science Reviews. Foresight Tackling Obesities: Future Choices – Obesogenic Environments – Evidence Review. United Kingdom: Government Office for Science, 2007
[54] The relationship of the local food environment with obesity: a systematic review of methods, study quality, and results. Obesity 2015; 23:1331–44

Development Stage	Summary of Health Effects
Construction	During construction, there are not anticipated to be any impacts on existing food outlets or community allotments in terms of either land-take or loss of access. Existing residents of villages within the study area will therefore be able to continue to access food choices in much the same way as at present. The health effect of the proposed Development in terms of access to healthy food choices during construction is considered to be **negligible**.
Early occupation	The phasing of the proposed Development is not yet fixed, however there is a commitment to ensure that each phase is successful and sustainable in its own right. This will therefore include the provision of appropriate retail facilities within each phase. The majority of the retail provision is currently planned for Phases 1 and 2. The creation of allotments and community orchard areas will also be phased. Early phases (Phases 1 and 2) will see the development of nearly 2ha of these uses (just over a quarter of the total), thus providing some opportunity for local residents to grow their own fresh produce. The health effect of the proposed Development in terms of access to healthy food choices during early occupation is considered to be **minor positive** and therefore, not significant.
Operation	Once the proposed Development is fully built out, there will be a wide range of food retail opportunities for new residents, as part of the town and local centres. This will provide a suitable range of choice of food outlets – including for example hot and cold provision, healthy food outlets, takeaways as is expected in most towns of this size. Residents will continue to have opportunities to grow / acquire fresh produce from the allotment areas and community orchards. The health effect of the proposed Development in terms of access to healthy food choices during operation is considered to be **major positive** and therefore, significant.

5.8 Access to Work and Training

5.8.1 This section considers the potential impacts on health as a result of access to work and training associated with the construction, early occupation and operation of the proposed Development.

Evidence Review

5.8.2 Employment is protective of health due to its associations with feelings of security, increased friendship networks and social status. To maximise health benefits, jobs need to be sustainable, offer a minimum level of quality, pay a decent living wage, provide opportunities for in-work development, provide flexibility to enable people to have a work and family life balance, and offer protection from adverse working conditions that can damage health. Income from employment also has an indirect financial effect on the quality of life of families, their health and the health of dependants.

5.8.3 Conversely, unemployment contributes to poor health and can lead to poverty, illness and a decrease in personal and social esteem. The long-term unemployed carry a greater burden of disease, particularly mental illness, than employed persons and those who are unemployed only for

a short time. The burden of disease increases with the duration of unemployment. The vicious circle of unemployment and disease can be broken only by the combined effects of health care, special health-promoting measures and social interventions[55]. Unemployment can have financial but also emotional and social impacts on family relationships; and on activities of other members of the family (for example education, work, leisure time, and social activities[56]). Improving household income is therefore likely to lead to better health. However, it should be noted that income is one of many factors which contribute to health, because of this, the direct causal relationship between income and health may be limited.

5.8.4 Rates of unemployment are highest among those with no or few qualifications and skills. Training and employment positively effects health and well-being, contributing to a healthy standard of living[57]. Inequalities in educational outcomes affect physical and mental health, as well as income, employment and quality of life. The relationship between socio-economic position and educational outcome has significant implications for subsequent employment, income, living standards, behaviours, and mental and physical health.

5.8.5 The Economic Development Strategy prepared for Shepway (2015) has as its key priority to *'boost the local economy and increases job opportunities'* through the development of an environmentally sustainable and vibrant local economy.

Environmental Baseline

5.8.6 Commercial uses located and currently operational within the application Site boundary include offices, workshops, a café and recording studio. These uses currently employ in the region of 70 staff.

5.8.7 A summary of the local and regional economic profile is provided in Chapter 5, highlighting that:

- economic activity rates are slightly lower within Folkestone & Hythe District than is the case for Kent
- there is a higher proportion of residents in caring, leisure and service occupations
- there is a higher claimant count for residents in Folkestone & Hythe District when compared to Kent and the South-East, with higher youth unemployment in particular.

5.8.8 The Employment Land Review for Shepway (2017) notes that Shepway supported around 48,200 jobs in 2016, representing an employment growth of 27% over the period from 1997 which was much higher than the growth recorded in Kent (22%), the South East (19%) and the UK (19%) over the same period. The District is over-represented in a number of employment sectors including public administration and defence, agriculture and finance and insurance, whilst under-represented in manufacturing, professional and other private services, and information / communication. Productivity (as measured by Gross Value Added) was lower in Shepway in 2016 than the average for Kent or the South East, reflecting the over-representation of lower value sectors in the district.

5.8.9 The Shepway Economic Development Strategy (2015 -2020) identifies four priorities for the area including building on economic strengths; boosting productivity and supporting business growth; promoting further investment; and improving education and skills attainment. Within these priorities there is a focus on promoting key sectors which are well represented in the district already and which have potential for future growth. These include financial services, creative industries, business and professional services, transport and logistics, energy, tourism, culture, retail and recreation, and advanced manufacturing. Key activities identified include encouraging more business start-ups, supporting businesses to grow and improving survival rates of businesses.

[55] Milner A, Page A, LaMontagne AD. Long-term unemployment and suicide: a systematic review and meta-analysis. PLoS One 2013; 8(1): e51333. 10.1371/journal.pone.0051333.
[56] Golics CJ, Basra MK, Finlay AY, Salek S. The impact of disease on family members: a critical aspect of medical care. J R Soc Med 2013; 106(10): 399- 407. 10.1177/0141076812472616.
[57] https://www.folkestone-hythe.gov.uk/media/5303/Fair-Society-Healthy-Lives---The-Marmot-Review/pdf/Fair_Society_Healthy_Lives_-_The_Marmot_Review.pdf

5.8.10 Travel to work data for the former Shepway District identifies it to be a net exporter of labour, with key commuting destinations being Ashford, Dover, Canterbury, Maidstone and central London. The self-containment rate for Shepway was 69% in 2011 (this refers to the share of residents who also work in the district). Travel to Work Areas (TTWAs) defined in 2015 by the Office for National Statistics (ONS) identify best fit boundaries within which commuting is as self-contained as possible. The 2015 data shows Folkestone and Dover as part of a combined TTWA (in previous assessments, Folkestone and Dover formed separate TTWAs).

5.8.11 The Employment Opportunities Study prepared for the Otterpool Park by Lichfields in March 2018 suggests that the existing commercial market is relatively localised, with the District recording a relatively low share of inward investments compared to other parts of Kent over the last two decades. Whilst the Folkestone & Hythe economy has grown relatively strongly during the past two decades, there are a number of gaps and issues which ultimately constrain the ability of the district to compete with other parts of Kent and the wider South-East. These include lower than average business start-up rates, out-commuting of more highly qualified residents, a lack of good quality and deliverable employment sites in accessible locations of greatest market demand (which in turn constrains economic performance and ability to diversify the local economy), and availability of high quality premises.

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5.8.12 The total proposed employment floorspace created by the proposed Development is 82,418 sqm, with employment spread across each of the Development Zones to meet local needs. The proposed Development has been estimated to generate 7,195 FTE across a range of sectors which, when taking into account part-time workers, could equate to 8,950 jobs.

5.8.13 The proposed Development also has the potential to create off-site jobs in the wider area, presenting an opportunity to provide a strategic employment function within Folkestone & Hythe District and to potentially act as a key attractor for some growth sectors.

5.8.14 In terms of training provision, the proposed Development aims to create up to 530 further education places, including work-place based and apprenticeship places. Just under half of these (approximately 250 places) are likely to be in a full-time education setting.

Assessment of Health Effects

5.8.15 The assessment of potential health effects for each of the three stages of development is summarised in Table 5-8.

Table 5-8 Assessment – Access to Work and Training

Development Stage	Summary of Health Effects
Construction	Construction employment has been calculated using regional data for employment and turnover within the construction sector based on Standard Industrial Classification 2007 subclasses and using data from the 2017 Annual Business Survey (Office for National Statistics). Estimates indicate that a total of 336 net FTE construction jobs could be created in the local area, with a further 496 jobs created in the wider region. Construction workers tend to be relatively mobile, and therefore it is uncertain what proportion of workers may come from the immediate area, however there is no doubt that the opportunity for employment will exist both within the immediate construction industry and its wider supply chain. Due to the large scale of the development developers may be encouraged to employ local workers and therefore, local trainees. The phased approach to the proposed Development offers long-term opportunities and could facilitate career development through

Development Stage	Summary of Health Effects
	apprenticeships and training in construction trades. The proposed Development also presents an opportunity for growth in new and developing construction trades, such as sustainable techniques and the green construction sector. Opportunities have been identified for establishing links with local education and training providers such as the construction skills centre at the Folkestone Campus of East Kent College, which has recently expanded. Health effects arising from the construction of the proposed Development in relation to access to work and training are therefore likely to be positive overall. Although effects are likely to be generally temporary in nature (due to the finite nature of the construction programme), there may be longer-term / permanent effects resulting from training programmes and skills development. In relation to the workforce in total, these beneficial effects are likely to generate a significant **moderate positive** effect. Vulnerable groups that may benefit in particular include low-income populations and the unemployed (particularly young people who may benefit from access to apprenticeships and construction training programmes).
Early occupation	During early occupation, the health effects as described in relation to construction will continue. There will also be the added effect associated with the provision of employment created directly as part of the proposed Development. Just over 8,500sqm of employment space is planned as part of Phase 1 (of which the majority is likely to comprise retail uses (A1/A2/A3)). Employment will also arise from the primary school development forming part of the initial phase. Both new and existing residents may benefit from the creation of these opportunities, with the health effects considered to be **moderate positive** and therefore, significant. Again, vulnerable groups that may benefit in particular include low-income populations and the unemployed.
Operation	Once the development has been fully built out, there will be a wide range of employment and training opportunities across the Site. A significant proportion of new jobs (75%) is estimated to be taken up by residents within the district, based on current commuting patterns. The employment generated within the proposed Development has the potential to create a range of jobs across different occupational groups with varying skills requirements. Given the mix of commercial floorspace proposed, a high proportion of jobs are expected to come forward in high value sectors such as professional, scientific and technical activities and manufacturing (61.8% and 3.4% respectively), with an estimated 64.6% of jobs in Otterpool Park requiring high-skilled workers. Health effects are considered to be **major positive** – impacting on physical and mental health and general well-being as a result of improved lifestyles, income and feelings of self-worth. The impact on health is therefore, significant. Vulnerable populations include low-income groups and the

Development Stage	Summary of Health Effects
	unemployed.

5.9 Air Quality, Noise and Neighbourhood Amenity

5.9.1 This section considers the potential impacts on health as a result of changes in air quality, noise and neighbourhood amenity associated with the construction, early occupation and operation of the proposed Development.

Evidence Review

5.9.2 Air pollution and noise annoyance impact on health independently, although the causes and impacts are highest for residents living close to major road networks and in urban areas. There is greater variability in physical health related quality of life measures as a result of air pollution, whereas noise pollution predicts greater variability in psychological, social and environmental domains[58]. Vehicle traffic is one of the largest contributors to air pollution. The presence of vegetation can affect the flow dynamic and dispersion of local atmospheric pollutants, improving localised air quality.

5.9.3 Increases in outdoor air pollution can lead to increased cardiovascular and respiratory mortality and morbidity. Some effects are more or less immediate and affect vulnerable groups (e.g. children or people whose health is already impaired) in particular, whereas the effects of long-term exposure are more widespread. Particulate Matter (PM) is the constituent most closely associated with adverse health effects.

5.9.4 Age is the most consistent effect modifier of the association between short-term exposure to particulate matter and death and hospitalisation, with older persons experiencing higher risks[59]. There is a significant association between hospital emergency visits for wheezing and gastro-enteric disorders in children 0–2 years of age and air pollution levels[60].

5.9.5 Noise pollution and vibration can lead to annoyance, interference with speech and sleep disturbance. It can also lead to cardiovascular and physiological effects. Stress has been suggested as a possible mechanism through which noise may affect mental and physical health. The evidence base (studies in both community and occupational settings) shows that potential of noise pollution to impact on health outcomes is strong and highlights that people's perception of noise can be as important as the actual noise levels themselves.

5.9.6 The level of effect from noise pollution can depend on the type of noise, nature of tasks being undertaken, and personal characteristics. Intermittent noise of relatively short duration has been found to be most disruptive, particularly where it interferes with cognitive tasks because there is limited capacity for the individual to compensate. In contrast, for conditions of continuous noise of longer duration, individuals can develop more effective coping strategies[61].

5.9.7 Vulnerable populations considered of particular sensitivity to noise related health effects include children, the elderly, the chronically ill, people with hearing conditions (impairments, those suffering

[58] Shepherd, D., Dirks, K., Welch, D., McBride, D. and Landon, J., 2016. The covariance between air pollution annoyance and noise annoyance, and its relationship with health-related quality of life. *International journal of environmental research and public health*, *13*(8), p.792.
[59] Bell ML, Zanobetti A, Dominici F. Evidence on vulnerability and susceptibility to health risks associated with short-term exposure to particulate matter: a systematic review and meta-analysis. *AmJEpidemiol* 2013; **178**(6): 865-76. 10.1093/aje/kwt090
[60] Orazzo F, Nespoli L, Ito K, et al. Air pollution, aeroallergens, and emergency room visits for acute respiratory diseases and gastroenteric disorders among young children in six Italian cities. *EnvironHealth Perspect* 2009; **117**(11): 1780-5. 10.1289/ehp.0900599
[61] Szalma JL, Hancock PA. Noise effects on human performance: a meta- analytic synthesis. PsycholBull 2011; 137(4): 682-707. 10.1037/a0023987.

from tinnitus) and people with mental illness (for example schizophrenia or autism). Evidence suggests noise pollution may limit children's learning[62].

5.9.8 Construction activities can have a short term negative impact on air quality – there can be dust from site works and construction vehicles carrying site materials or waste along with exhaust emissions from construction and other traffic due to road disruption and diversions. Further, construction activities can lead to an increase in localised noise and vibration. Although a significant amount of emissions can be produced from construction activities, a variety of actions can be taken to reduce the environmental impacts[63].

5.9.9 Indirect health effects can occur as a result of noise or perceived air pollution, including deterring walking and cycling, thereby impacting on physical activity levels.

Environmental Baseline

5.9.10 The Kent Environment Strategy[64] claims that 'Kent's unique position between London and the continent brings significant challenges in relation to air pollution through cross-channel freight and traffic... and is currently facing increased congestion on both road and rail, impacting Kent's economy, health and environment'. One of the priorities of the strategy is to bridge gaps in understanding risk and to consider opportunities to identify actions. This includes developing understanding of air and noise quality impacts on health.

5.9.11 The Kent State of the Environment report[65] sets a Vision for Kent to overcome the health and environmental effects arising from pollution. The report discusses the Kent and Medway Air Quality Partnership (KMAQP), which is a network funded by the combined local authorities to promote the improvement of air quality within the region, help local authorities meet their obligations under environmental regulations and maintain an accessible database of robust measurements for public reporting, research and development.

5.9.12 Baseline evidence from air quality monitoring sites across FHDC in 2017 showed that NO_2 concentrations ranged from 16.2 to 30 $\mu g/m^3$, with the majority falling between 19 and 23 $\mu g/m^3$ (well below the annual mean AQS objective of 40 $\mu g/m^3$). Between 2013-2017 the monitored results showed that there was no real upward or downward trend and that concentrations have remained stable. Similar evidence from monitoring sites within Ashford Borough Council (ABC) demonstrated that the 2017 ABC NO_2 concentrations ranged from 17.3 to 36.4 $\mu g/m^3$, again below the annual mean AQS objective of 40 $\mu g/m^3$.

5.9.13 In addition to this evidence, a six month air quality monitoring survey was undertaken by Arcadis in the vicinity of the application site in order to better inform baseline air quality. The findings from the monitoring survey demonstrated that annual mean NO_2 concentrations were well below the annual mean AQS objective of 40 $\mu g/m^3$ indicating a reasonably good level of existing air quality in the vicinity of the application site. Defra background maps confirmed that background NO_2, PM_{10} and $PM_{2.5}$ concentrations are low across the application site when considered in the context of the respective AQS objectives. Further detailed information relating to baseline survey work can be obtained from the Environmental Statement (Chapter 6: Air Quality).

5.9.14 Existing noise sources at the Site and within the surrounding area are primarily from road traffic using the M20 motorway just to the north of the Development and trains using the high-speed electrified rail line that connects London with continental rail networks via the channel tunnel. The Lympne industrial estate located to the south of the Site dominates the baseline noise environment here. To a lesser extent parts of the Site have a noise environment that is influenced by traffic on the local road network and general human activities such as farming and residential noise sources.

[62] Health Impact Assessment of Transport Initiatives: A Guide, Health Scotland, MRC Social and Public Health Sciences Unit and Institute of Occupational Medicine 2007, pp 32-33; Access and Health in the East of England, Eastern Region Public Health Observatory, 2006, p 25-26

[63] Zhang, X., Shen, L. and Zhang, L., 2013. Life cycle assessment of the air emissions during building construction process: A case study in Hong Kong. *Renewable and Sustainable Energy Reviews*, *17*, pp.160-169.

[64] Kent Environment Strategy - A Strategy for Environment, Health & Economy - March 2016

[65] Kent State of the Environment 2015 - A review of current and potential indicators within the Kent Environment Strategy.

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5.9.15 The Scheme design incorporates a number of measures that serve to reduce the number of vehicle trips generated or that encourage the use of low emission vehicles, including:

- minimising reliance upon motor vehicle use
- promoting alternative transport options
- inclusion of integrated cycle paths into surrounding environments
- inclusion of pedestrian walkways into surrounding environments
- inclusion of electric charging points
- implementation of a Travel Plan
- integration of public transport provisions.

5.9.16 The design of the residential area, in particular areas to the north of the site due to the proximity of the M20 and HS1 route will have appropriate mitigation measures for noise control including:

- Glazing and ventilation provision to ensure internal noise climates are suitable
- The design and layout of the development ensures that noise is controlled and that sensitive areas are not exposed to significant noise sources
- The development includes provision for acoustic screening through design and optimum placement of buildings. Specific acoustic fencing/ bunding will be used where necessary.

Assessment of Health Effects

5.9.17 The assessment of potential health effects for each of the three stages of development is summarised in Table 5-9.

Table 5-9 Assessment – Air Quality, Noise and Neighbourhood Amenity

Development Stage	Summary of Health Effects
Construction	Construction phase impacts, including on human health, are anticipated (if unmitigated) from dust emitted by construction activities and vehicle movements. The maximum risk of dust effects for construction of the proposed Development is considered to be high; therefore mitigation measures detailed in the IAQM construction dust guidance commensurate with a high risk site should be adopted as part of the outline CoCP. With appropriate mitigation measures, residual construction phase dust impacts should be no worse than negligible. Impacts to specific identified receptors as a result of noise levels during the construction phase are expected to be relatively short-term in duration as a result of the changing operational areas as construction phasing progresses. The exact duration over which impacts might arise at any given receptor is not yet known and will not be concluded until detailed phasing of the construction programme is produced. Any element of the construction works that may have a significant adverse effect will be identified and considered within the Construction Environmental Management Plan (CEMP) and CoPA S61 agreement at which time appropriate mitigation measures and best practice techniques will be proposed. Demolition work in particular has the potential to create higher noise levels that may have a temporary adverse impact upon existing

Development Stage	Summary of Health Effects
	residents located close to these properties. Typically works during the construction phase would only be undertaken during daytime hours. To prevent any adverse effects on visual impact from the construction period a Code of Construction Practice (CoCP) will be secured as a planning condition to safeguard the visual amenity of the area. The health impacts from air quality, noise and neighbourhood amenity are considered to be **moderate negative** during construction and therefore, significant.
Early occupation	Construction vehicle exhaust emissions have been considered as part of the 2022 and 2029 operational phase local air quality assessments as construction would be ongoing as the first phases of the proposed development are built out and occupied. The Air Quality assessment provided in Chapter 6 of the ES states that all sensitive receptors bar four experience a negligible effect on air quality in 2022; the four receptors identified are all located in Newingreen and are predicted to experience a slight beneficial impact, as a result of the construction of the new A20 link road. Annual mean PM_{10} and $PM_{2.5}$ impacts at existing receptors in 2022 are negligible as all increases are less than or equal to 0.2 $\mu g/m^3$. The year 2029 represents peak construction year. Again, the majority of sensitive receptors are likely to experience a negligible impact in relation to NO_2. Two receptors have been identified as experiencing a slight adverse impact in local air quality; sites are approximately 30m south of the M20 in Cheriton and at Hatch Lodge immediately north of the A20 between Ashford and the application site and increases are attributable to vehicle increases on the A20 and M20. Annual mean PM_{10} and $PM_{2.5}$ impacts at existing receptors are negligible as all increases are less than or equal to 0.3 $\mu g/m^3$. The operation of the partially built proposed development in 2029 is not expected to result in any significant adverse impact on local air quality. The slight adverse impacts (associated with two receptors) are not sufficient in magnitude or quantity to suggest that the proposed development would result in a long term significant adverse effect on local air quality. During the early occupation phase structural planting of native vegetation will commence, to allow to vegetation to mature and act as a visual mitigation method towards further construction. During early occupation the health impacts from air quality, noise and neighbourhood amenity are considered to be **minor negative**, therefore, not significant.
Operation	The operation of the fully developed proposed development (inclusive of the Framework Masterplan) is not expected to result in any significant adverse effect on local air quality. The slight adverse impacts (associated with three receptors) are not sufficient in magnitude or quantity to suggest that the proposed development would result in a long term significant adverse effect on local air quality. Two of the three receptors are located to the south of the application site on Aldington Road, with the third located on the A20

Development Stage	Summary of Health Effects
	Hythe Road between Ashford and Sellindge. Annual mean PM_{10} and $PM_{2.5}$ impacts at existing receptors are negligible as all increases are less than or equal to 0.7 µg/m^3 Changes in concentrations at existing receptors are negligible for the vast majority of receptors for all pollutants. Total concentrations across the application site are well below relevant annual mean AQS objectives indicating that the occupants of the site in 2046 would be subject to an acceptable standard of air quality. The proposed Development would generate increases in noise as a result of changes in traffic flow characteristics and composition on road links in the area; the proposed Development also results in the creation of new noise sources (for example sports pitches, commercial activities). Although there will be permanent adverse effects from noise created by the new proposed development, the noise is to be considered within the scope of an appropriate Acoustic Design Strategy (DS), therefore, not to have a significant residual effect. Major short-term impacts are expected along Aldington Road with the with the 2046DM and 2046DS scenario, however, in the long term these would be expected to reduce to Minor adverse effects. As with this development noise along this main route would be typical of many busy roads of this type. Structural planting as supported in the F&HDC-CSR policy SS7 (New Garden Settlement – Place Shaping Principles) will be used to separate neighbourhoods within the settlement itself and provide a visual and physical buffer from the M20 and railway from noise and air quality mitigation purposes. The health impacts on residents from air quality, noise and neighbourhood amenity are considered to be **minor negative** and therefore, not significant due to mitigation measures resulting in less pollutants, noise and visual disturbance in the local area.

5.10 Social Cohesion and Lifetime Neighbourhoods

5.10.1 This section considers the potential effects on health as a result of impacts on social cohesion associated with the construction, early occupation and operation of the proposed Development.

Evidence Review

5.10.2 Social cohesion refers to the value derived from strong social networks within a community. Social cohesion can create an environment which is more prosperous, liveable and economically viable[66], supporting well-being, including personal well-being and health. Cohesive communities are characterised by a sense of belonging to an area, respect for diversity and the presence of similar and equal opportunities for all residents[67]. Links between social capital / cohesion and health and well-being include opportunities for social participation and support (which can result in a reduced

[66] https://www.ifhp.org/agenda/making-cities-socially-cohesive
[67] https://www.futurecommunities.net/ingredient/45/developing-and-delivering-cohesive-community

risk of cardiovascular disease, anxiety and depression). Research has shown that improved social cohesion can lead to improvements in mental well-being and health.

5.10.3 As noted in the earlier section relating to access to healthcare and social infrastructure, case study evidence has shown that social facilities and community infrastructure are key requirements as mechanisms for building social capital and community support with lack of appropriate facilities cited as important contributory factors for mental health issues[68].

5.10.4 New residential developments have the means to provide an environment which place a central focus around people and their collective neighbourhood[69]. The environment should be socially diverse and inclusive of all people to encourage social cohesion in the community[70].

5.10.5 In areas where new settlements are created, connecting the new development with existing communities is extremely important. Social interaction between people living in the existing community, developers and new residents must be carefully considered. People living in areas identified for new housing may feel concerns about new developments, for example relating to implications for the value of their home, effects on local infrastructure and increased congestion, which may cause stress and anxiety. To create cohesive communities with residents from existing and new developments it is important therefore that the two groups have opportunities to mix and interact. This approach can be taken at a street by street level for example, ensuing that a public good such as a post box is situated in a place to attract people. Another method may involve working with existing communities to develop services and facilities needed locally, for example affordable housing, housing aimed at first times buyer or assisted housing for the elderly[71].

5.10.6 The antithesis to social cohesion is community severance. Community severance is generally a poorly understood concept among both researchers and practitioners and as a result can be difficult to quantify and measure. Community severance can result from new roads, road improvements and changes in traffic levels. It can also be time-specific and may affect different user groups in different ways[72].

5.10.7 In order to achieve social cohesion and avoid community severance, the environment must focus on sustainability and being accessible for inhabitants, regardless of age, ability or disability[73]. Community severance barriers can be grouped into three groups across the literature: physical, psychological and social, although they are not necessarily mutually exclusive. Physical barriers can be static or dynamic e.g. waterways or railway line are static barriers, whereas parked cars can be continuous lines of stationary vehicles, but the configuration is changeable. Psychological barriers are areas with perceived danger, safety or unpleasantness. Social barriers include isolation, accessibility particularly for pedestrian connectivity and public transport access.

Environmental Baseline

5.10.8 Existing communities within the immediate vicinity of the proposed Development are the villages of Lympne, Sellindge, Stanford, Barrow Hill and Newingreen. Both Lympne and Sellindge have populations in the region of 1,500 people (according to 2011 Census data) and are home to a small range of local services and facilities. Sellindge Village Hall and Lympne Village Hall are run by Sellindge and Lympne Parish Councils respectively and available to hire for community uses. Sellindge Sports and Social club also hosts local activities. There are also places of worship belonging to multiple congregations, including several historic parish churches. Evidence from

[68] Ibid.
[69] Gomez, S.L., Shariff-Marco, S., DeRouen, M., Keegan, T.H., Yen, I.H., Mujahid, M., Satariano, W.A. and Glaser, S.L., 2015. The impact of neighbourhood social and built environment factors across the cancer continuum: current research, methodological considerations, and future directions. Cancer, 121(14), pp.2314-2330.
[70] Vincent, J. and Pateman, J., 2016. From social inclusion to community cohesion. In British Librarianship and Information Work 2001–2005 (pp. 41-61). Routledge.
[71] https://www.futurecommunities.net/ingredient/45/developing-and-delivering-cohesive-community
[72] Anciaes, P.R., Boniface, S., Dhanani, A., Mindell, J.S. and Groce, N., 2016. Urban transport and community severance: linking research and policy to link people and places. Journal of Transport & Health, 3(3), pp.268-277.
[73] Stafford, L. and Baldwin, C., 2015. Planning neighbourhoods for all ages and abilities: A multi-generational perspective. In Refereed Proceedings of State of Australian Cities Conference 2015. State of Australian Cities Research Network

community consultation has demonstrated that the community halls are successful and popular with local residents.

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5.10.9 The DAS for the proposed Development states that a vibrant community is at the heart of the vision for Otterpool Park, ensuring the most valuable resource will be its people. This visionary place will encourage active involvement from every generation, developing pride in their community and sharing in its success. The community will also have strong connections with the wider area through effective partnerships, ensuring that it is seen as *part* of the district.

5.10.10 Otterpool Park aims to be a healthy and vibrant community that is empowered, self-resilient and which takes responsibility for its interaction with the environment and successfully integrates with neighbouring communities. The lifestyle and needs of the community have been considered, with community facilities provided to benefit both the Otterpool Park residents and existing communities. With each phase of the proposed Development, a socially mixed community will be created incrementally.

5.10.11 Otterpool Park will comprise 22% affordable housing, in line with the Affordable Housing Supplementary Planning Document for (the then) Shepway District Council (2008) and emerging policy requirements. The types of dwellings proposed support the various needs of future residents, including various affordable housing types, self and custom build provisions and housing of different tenures. Otterpool Park will positively contribute to the housing supply need and need for various dwelling tenures and sizes to meet the need of a variety and diverse range of future residents.

5.10.12 The Shepway district comprises a higher proportion of retired and elderly residents, in which Otterpool Park recognises and aims to provide a range of options for older people to meet their care needs, including 'down-size' dwellings, a retirement village, nursing home and extra care housing with support functions. Dwelling types aimed at older people will be integrated into neighbourhoods to support social cohesion and in geographical proximity to local town centres for maximum accessibility and community engagement opportunities.

Assessment of Health Effects

5.10.13 The assessment of potential health effects for each of the three stages of development is summarised in Table 5-10.

Table 5-10 Assessment – Social Cohesion and Lifetime Neighbourhoods

Development Stage	Summary of Health Effects
Construction	There is potential for adverse effects during construction as a result of reduced community interaction; however there are not proposed to be any changes in access to existing community centres or facilities and mitigation measures proposed in the CoCP should ensure that environmental effects as a result of construction activities are minimised. As such, the health effects are considered to be **negligible**. Vulnerable populations may include groups such as the elderly, for whom there may be a perception of reduced community interaction, or a perception of changes to mobility, as a result of the presence of construction activities in the area.
Early occupation	The potential health implications of early occupation are primarily related to mental health issues; these can be associated with a lack of a sense of belonging, lack of opportunities for community interaction and stresses created by ongoing construction activity (for example noise or amenity issues). All age groups and

Development Stage	Summary of Health Effects
	backgrounds are potentially vulnerable to these issues. Phasing of the proposed Development importantly incorporates opportunities for community interaction at the earliest stage – Phase 1 includes provision of education and community centre space. It will also be important that measures are put in place to develop the community interaction as part of the stewardship of the Development. With such measures provided, the effect on health from early occupation is considered to be **minor negative** and therefore, not significant.
Operation	The proposed development includes for the creation of new neighbourhoods, linked together through new accesses and infrastructure, and including the creation of community facilities. Health effects are considered to be beneficial and long-term, providing new opportunities for social interaction. It is considered that the proposed Development will have a significant **major positive** impact on the health and well-being of residents. Vulnerable populations include those for whom mobility may be impaired, such as people with disabilities and the elderly, who may find it difficult to undertake social interactions.

5.11 Minimising the Use of Resources

5.11.1 This section considers the potential effects on health as a result of the use of resources associated with the construction, early occupation and operation of the proposed Development.

Evidence Review

5.11.2 The construction industry is a vital element of the economy but has a significant impact on the environment. Construction requires large quantities of energy, water and material resources. With such significant impacts, taking a sustainable building approach is an increasingly important action[74]. In order to extend the life span of the dwellings, reduce the use of further resources to fix operational mistakes and reduce the ongoing environmental damage, the way construction practitioners operate must place sustainability as the central focus.

5.11.3 The operational phase of the development should ensure the use of materials that are ethically sourced, efficiently reuse and recycle materials and ensure sustainable travel journeys. To maintain sustainable operations homeowners must be provided with environmental knowledge (for example with regard to waste management and recycling) to affect their attitudes and behaviours in making environmentally friendly decisions, as results show that they often do not come equipped with such knowledge[75]. To further maintain resident's engagement, educational programmes and well-designed management plans should be considered.

Environmental Baseline

5.11.4 The reported Construction Demolition and Excavation (CDE) waste arisings from Kent and managed in Kent were just under 2 million tonnes (1.85 million tonnes) in 2015. The total capacity of waste management facilities and landfill sites in Kent that could potentially take CDE waste are 3,717,773 tonnes and 3,708,751 m^3 (approximately 5,526,039 tonnes) respectively. In addition, there are

[74] Akadiri, P.O., Chinyio, E.A. and Olomolaiye, P.O., 2012. Design of a sustainable building: A conceptual framework for implementing sustainability in the building sector. Buildings, 2(2), pp.126-152.
[75] Hostetler, M. and Noiseux, K., 2010. Are green residential developments attracting environmentally savvy homeowners? Landscape and Urban Planning, 94(3-4), pp.234-243.

landfill sites that are anticipated to become operational during the construction phase of the proposed Development**Error! Reference source not found.**.

5.11.5 The majority of the Site is currently undeveloped and is primarily agricultural land. Waste arisings are currently only generated from agricultural activities and the small number of existing residential and business operations within the Site. Currently an alternating weekly collection system for the properties in FHDC is provided. In 2016, this represented 49,660 households. For households, residual waste and recycling is collected on alternate weeks, with food waste collected weekly. Garden waste is collected on alternate weeks for garden waste subscribers.

5.11.6 KCC operates 21 'bring' sites, of which two (Folkestone and New Romney) are located within FHDC. KCC achieved a recycling rate of 46% in 2014, 44.3% in 2015 and 43.7% in 2016. Comparing these rates against regional and national performance shows that they are comparable to the average for England.

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5.11.7 A Sustainability Statement has been prepared to accompany the OPA, which sets out how the proposed Development complies with local and national sustainability requirements. The Statement notes that, in relation to materials and waste, early commitment to reducing the embodied carbon and environmental impact of materials and resources and considering sourcing, conservation and re-use can help deliver a more sustainable outcome. Utilising materials that are also local and resilient can reduce longer term negative environmental impacts. Moving towards a more sustainable model of resource use and waste management is fundamental to achieving sustainable development. The management of waste can deliver positive environmental and economic outcomes during both the construction and operation of a development.

5.11 The Otterpool masterplan has been designed with sustainable development at its core. It has been designed to reduce carbon dioxide (CO_2) emissions, be resource efficient, adapt to climate change, manage pollution, protect heritage, enhance biodiversity, boost the local economy and increase health and wellbeing. Relevant measures include that the proposed Development:

- delivers a scheme which, as a minimum, complies with national and local requirements for low and zero carbon.
- is designed with a low carbon future in mind with the consideration for Electric Vehicle (EV) infrastructure and electrical heating via Air Source Heat Pumps (ASHP)
- utilisation of low environmental impact materials and modern methods of construction
- reuse of demolition and excavation waste to reduce the impact on existing waste facilities
- buildings are to be designed with sustainability in mind with non-residential buildings aspiring for BREEAM 'Outstanding' and residential buildings emitting at least 20% less carbon than required by building regulations.

Assessment of Health Effects

5.11.8 The assessment of potential health effects for each of the three stages of development is summarised in Table 5-11.

Table 5-11 Assessment – Minimising the Use of Resources

Development Stage	Summary of Health Effects
Construction	It is anticipated that construction materials would be managed efficiently, minimising waste, that all demolished materials would be reused onsite and that, with the implementation of a 'cut and fill neutral' strategy, all excavated materials would be reused onsite. Recycling all inert and non-hazardous waste onsite, adhering to the requirements of the Waste Strategy and the Site Waste Management Plan submitted with the OPA would ensure that impacts of construction waste are minimised. Therefore, despite the

Development Stage	Summary of Health Effects
	high volumes of construction waste likely to arise from the construction of the proposed Development, the significance of effect on the FHDC and KCC waste management infrastructure has been assessed in the Environmental Statement as neutral. The proposed Development is considered to have a **negligible** effect on health as a result of measures to minimise use of resources and appropriate waste management.
Early occupation	Construction effects as described above would continue during the early occupation period. With relation to early phases of development, the Sustainability Statement contains further detailed information relating to domestic waste collection infrastructure planned for inclusion in residential units. An Energy Strategy has also been developed for the proposed Development which sets out how energy efficiency of homes and wider development can be achieved. As during the construction phase, the proposed Development is considered to have a **negligible** effect on health as a result of measures to minimise use of resources and appropriate waste management.
Operation	During the lifetime of the proposed Development, large quantities of operational waste are likely to be produced on the Site (which currently generates minimal volumes of waste from a small number of existing homes and businesses). This could have a potentially significant effect on local waste management infrastructure and the ability of FHDC and the wider KCC to meet waste management targets. It is anticipated that operational waste would be managed efficiently, minimising waste arisings and diverting waste from landfill. A Waste Strategy has been developed as an embedded mitigation measure to provide a planned approach to resource as well as waste management. The Waste Strategy has identified the likely quantities and composition of waste that would be generated and proposes appropriate waste management options that would optimise the management of waste generated during both construction and operation phases. The Sustainability Statement contains further detailed information relating to domestic waste collection infrastructure planned for inclusion in residential units. An Energy Strategy has been developed for the proposed Development which sets out how energy efficiency of homes and wider development can be achieved. The proposed Development is considered to have a significant **moderate positive** impact on health as a result of the minimisation of resources used during the operational phase.

5.12 Climate Change

5.12.1 This section considers the potential effects on health as a result of impacts related to climate change associated with the construction, early occupation and operation of the proposed Development.

Evidence Review

5.12.2 Climate change is one of the biggest challenges facing the UK and world today. Buildings including residential dwellings are a significant emitter of CO_2 in the UK[76].

5.12.3 The Marmot Review is clear that local areas should prioritise policies and interventions that 'reduce both health inequalities and mitigate climate change' because of the likelihood that people with the poorest health would be hit hardest by the impacts of climate change.

5.12.4 Climate change consequences, at local level, could affect the health of the population, particularly with an increase in flooding, summer temperatures, levels of solar radiation and frequency of extreme weather events. These could, for example, increase the numbers of fatalities, injuries, infectious diseases, heat related deaths, skin cancer cases and cataracts. People from deprived communities (for example low-income households) as well as people with disabilities and older people, may be most vulnerable to the consequences of climate change, potentially lacking the resources or ability to be able to respond.

5.12.5 The creation of a new urban environment within a distinctive rural area can alter the local microclimate. Urban areas change the energy exchange taking place which has the potential to create an urban heat island[77]. The hydrology of the area can be greatly affected, with increased surface runoff of rainwater due to impermeable surface cover, e.g. concrete paving. Urban areas typically have less vegetative cover, which could affect the evaporative cooling process, leading to hotter summers and colder winters. Climate change has the potential to negatively amplify these features[78]. South East England is an area which experiences the greatest quantity of water shortages across the UK. Urban vegetation is often a first indicator of future drought and its negative implications.

5.12.6 Landscapes play a positive role in biodiversity protection, reducing flood risk and controlling air quality pollutants. Mitigating changes to the environment include the incorporation of areas of green space, private gardens and parks[79]. Urban green space can provide a vital ecosystem for flora and fauna in terms of protection, conservation and in supporting new species. Mature trees play a vital role in providing shade, interception of rainfall, cooling function[80]. Green space has the potential to exceed just the amenity value and directly provide physical, mental, social, environmental and economic benefits to residents[81].

5.12.7 All construction projects have the potential to damage natural habitats, threaten wildlife and plant species, although steps can be undertaken to reduce the negative impacts. The Government's sustainable communities programme highlights the scope to 'climate proof' new developments.

5.12.8 One of the largest emitters of greenhouse gas (GHG) emissions from new developments is transportation emissions. Low density residential developments are more GHG intensive over higher density units[82], due to increased car ownership and reliance on the private car for more journeys. Studies also show that higher density residential dwelling are associated with increased efficiencies in infrastructure and energy[83].

Environmental Baseline

[76] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/8557/1415525.pdf
[77] Berardi, U. and Wang, Y., 2016. The effect of a denser city over the urban microclimate: The case of Toronto. Sustainability, 8(8), p.822.
[78] Gill, S.E., Handley, J.F., Ennos, A.R. and Pauleit, S., 2007. Adapting cities for climate change: the role of the green infrastructure. Built environment, 33(1), pp.115-133.
[79] Braubach, M., Egorov, A., Mudu, P., Wolf, T., Thompson, C.W. and Martuzzi, M., 2017. Effects of Urban Green Space on Environmental Health, Equity and Resilience. In Nature-Based Solutions to Climate Change Adaptation in Urban Areas (pp. 187-205). Springer, Cham
[80] https://www.planningni.gov.uk/downloads/best-practice-trees-2.pdf
[81] https://www.london.gov.uk/sites/default/files/at_home_with_nature_-_encouraging_biodiversity_in_new_housing_developments.pdf
[82] Norman, J., MacLean, H.L. and Kennedy, C.A., 2006. Comparing high and low residential density: life-cycle analysis of energy use and greenhouse gas emissions. Journal of urban planning and development, 132(1), pp.10-21.
[83] Alexander, D. and Tomalty, R., 2002. Smart growth and sustainable development: Challenges, solutions and policy directions. Local Environment, 7(4), pp.397-409.

5.12.9 At a county level Kent Council's Climate Change report (2006) recognises the evidence of climate change and the implications for the UK and Kent, notably rising temperatures and reduced summer rainfall.

5.12.10 The Climate Change Act outlines the framework for the UK to achieve its long-term goals of reducing GHG by 34% (from the 1990 baseline) by 2020 and by 80% by 2050, whilst also ensuring that steps are taken towards adapting to the impact of climate change.

5.12.11 The Carbon Plan: Delivering our Low Carbon Future (2011) sets out how the UK will achieve decarbonisation and work towards a low carbon economy. The Plan promotes the use of low carbon and adaptive buildings to contribute to national carbon reduction targets.

5.12.12 The Kent Environment Strategy (2016) identifies climate change and energy consumption and generation as key challenges for the future. GHG emissions from buildings accounted for 34% of total UK emissions in 2014, within buildings emissions. Residential GHG emissions account for 64% of buildings emissions and approximately 50% of all building's emission are made from fossil fuels (primarily gas) for heating.

5.12.13 The UK emissions from buildings accounted for 34% of total UK emissions in 2014, within buildings emissions. Residential GHG emissions account for 64% of buildings emissions and approximately 50% of all building's emission are made from fossil fuels (primarily gas) for heating.

5.12.14 The UK construction industry is the largest consumer of natural resources with an average of over 400 million tonnes of raw materials consumed every year. This accounts for approximately 10% of the total UK carbon emissions.

5.12.15 The Local Climate Impact Profile (LCIP) reported that Kent is experiencing major weather events and that 52 highly significant events between the period 1996 - 2010, including heavy rain, flooding, heatwaves, droughts, freezing temperatures, snow and multiple storms. Impacts in Kent from these weather events resulted in loss of power to homes and businesses, closure of roads and disruption to rail services.

Climate change is predicted to increase the frequency and severity of several extreme weather events in England and the South East, in particular for warmer, drier summers and warmer wetter winters.

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5.13 The proposed Development has been designed to incorporate features which reduce carbon dioxide (CO_2) emissions, are resource efficient, adapt to climate change, manage pollution, and increase health and wellbeing. Relevant measures to climate change include that the proposed Development:

- Delivers a scheme which, as a minimum, complies with national and local requirements for low and zero carbon
- Is designed with a low carbon future in mind with the consideration for Electric Vehicle (EV) infrastructure and electrical heating via Air Source Heat Pumps (ASHP)
- The flood risk from all sources has been assessed and concludes that the proposed development is at low risk of flooding including a consideration for climate change
- The specification of water efficient fittings and rainwater harvesting to reduce water consumption in area of water stress.
- Utilisation of low environmental impact materials and modern methods of construction
- Reuse of demolition and excavation waste to reduce the impact on existing waste facilities
- Designed with sustainable travel in mind. Public transport, cycling and walking is to be favoured of private car use by ensuring safe walking and cycling routes and transport hubs and stops within a safe walking distance. Facilities for electric vehicle charging to be provided.
- Buildings are to be designed with sustainability in mind with non-residential buildings aspiring for BREEAM 'Outstanding' and residential buildings emitting at least 20% less carbon than required by building regulations.

5.12.16 An Energy Strategy has been developed to demonstrate how Otterpool Park will meet national and local planning requirements including Part L of the Building Regulations. The Energy Strategy (which accompanies the OPA) ensures that all sources and forms of energy consumption, generation, distribution and ownership are reviewed as part of the Masterplan design. It provides an evidence base for decisions and ensure that the Masterplan incorporates futureproofing, as the proposed Development will be delivered within an evolving regulatory and technical energy market.

5.12.17 Climate change is likely to impact on water supply and management due to increasing irregularity in precipitation patterns and a higher likelihood of droughts. Protecting and conserving water supplies and resources in order to secure the needs of the population of Otterpool Park in a sustainable manner is seen as an urgent priority.

5.12.18 The proposed Development would utilise Sustainable Drainage Systems (SuDS) to manage surface water across the proposed Development, in terms of both water quality and quantity. The Site would aim to be an exemplar regarding the provision of SuDS and multi-functional green space, promoting Water Sensitive Urban Development (WSUD) principles. This would ensure that flood risk is mitigated during each development phase and cumulatively as the phases progress, whilst also reduce water demand and maximise overall environmental benefits. The use of SuDS would promote good water quality standards and would also allow for the creation of new wildlife spaces and valuable open amenity areas.

5.12.19 The conceptual surface water strategy, which is in line with SuDS principles, will enable the proposed Development to discharge at greenfield rates for up to and including a 1 in 100-year event with 40% allowance for climate change. Therefore, during a flood event of up to a 1 in 100-year return period, no actions are required to provide additional protection.

5.12.20 An outline Water Cycle Study (WCS) has been prepared and describes proposals for the sustainable planning of water use and wastewater treatment.

5.12.21 The vision for Otterpool Park is to emphasise local distinctiveness, celebrate biodiversity, facilitate healthy lifestyles and create enjoyable living environments for existing and future residents. The masterplan aims to conserve and enhance habitats.

Assessment of Health Effects

5.12.22 The assessment of potential health effects for each of the three stages of development is summarised in Table 5-12.

Table 5-12 Assessment – Climate Change

Development Stage	Summary of Health Effects
Construction	The design of the proposed Development aims to reduce GHG emissions by avoiding, preventing and exploring alternative lower carbon options and using materials and techniques efficiently to minimise carbon output. Materials for the construction process where practical will be sourced locally to minimise further travel emissions. The construction process will further mitigate measures as detailed in the CoCP which will serve as a live document for the contractor. There are not considered to be any health effects arising from issues associated with climate change as a result of the construction of the proposed Development, provided that mitigation measures set out in the CoCP are incorporated into construction practices and that measures identified in the Sustainability Statement are followed. Therefore, the health effects from the construction phase from the proposed Development will be **negligible**.

Development Stage	Summary of Health Effects
Early occupation	As with the construction phase, there are not considered to be any health effects associated with climate change as a result of the construction of the proposed Development. There may be long-term beneficial effects on health and well-being for new occupants of Otterpool Park arising from the incorporation of measures to create a sustainable development (and thereby reduce localised effects of climate change). Accordingly, it is considered that there would be a **minor beneficial** effect on health during this stage and therefore, not significant.
Operation	A wide range of measures have been put in place to reduce CO_2 emissions, and save energy as well as the incorporation of strategies to respond to environmental events such as flooding. The overall effects on health and well-being are considered to have a significant **major positive** effect.

APPENDIX A

Results of Scoping Exercise

1 Table A.1 sets out the findings of the scoping exercise to identify health determinants that may be affected by the proposed Development. The table follows HUDU guidance, using a source-pathway-receptor model to identify potential impacts. Commentary has been included to identify what potential impacts might be and sources of the evidence base that would be used to undertake the HIA.

Table A.1 Scoping of Health Determinants

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
Housing Quality and Design			
▪ Does the proposal seek to meet all 16 design criteria of the Lifetime Homes Standard or meet Building Regulation requirement M4 (2)?	Early occupation Full build-out	Design standards as set out in the Planning Statement / Design and Access Statement	Positive
▪ Does the proposal address the housing needs of older people, i.e. extra care housing, sheltered housing, lifetime homes and wheelchair accessible homes?	Early occupation Full build-out	The Framework Masterplan Report expresses a strong commitment to providing a range of tenures, including affordable housing. Tenures include extra-care housing, shared ownership, social rent, starter homes and private rental.	Positive
▪ Does the proposal include homes that can be adapted to support independent living for older and disabled people?	Early occupation Full build-out	As set out in the Framework Masterplan Report.	Positive
▪ Does the proposal promote good design through layout and orientation, meeting internal space standards?	Early occupation Full build-out	'Healthy Homes' design features.	Positive
▪ Does the proposal include a range of housing types and sizes, including affordable housing responding to local housing needs?	Early occupation Full build-out	As set out in the Framework Masterplan Report.	Positive
▪ Does the proposal contain homes that are highly energy	Early occupation	Energy Statement to accompany outline planning	Positive

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
efficient (e.g. a high SAP rating)?	Full build-out	submission.	
Access to Healthcare Services and other Social Infrastructure			
▪ Does the proposal retain or re-provide existing social infrastructure?	N/A	No social infrastructure being lost during project construction or build out phases.	N/A
▪ Does the proposal assess the impact on healthcare services?	Early occupation Full build-out	Population projections for the new community will be developed which will influence the requirements for healthcare and other social infrastructure.	Positive
▪ Does the proposal include the provision, or replacement of a healthcare facility and does the facility meet NHS requirements?	Early occupation Full build-out	As above	Positive
▪ Does the proposal assess the capacity, location and accessibility of other social infrastructure, e.g. schools, social care and community facilities?	Early occupation Full build-out	In addition to population projections, a review has been undertaken of the capacity of existing social infrastructure (for example schools and community facilities).	Positive
▪ Does the proposal explore opportunities for shared community use and co-location of services?	Early occupation Full build-out	As part of the Framework Masterplan Report	Positive
▪ Does the proposal contribute to meeting primary, secondary and post 19 education needs?	Early occupation Full build-out	As above, combination of population projections and identification of existing facilities and services.	Positive
Access to Open Space and Nature			
▪ Does the proposal retain and enhance existing open and natural spaces?	Construction Early occupation Full build-out	Studies have shown that exposure to the natural environment, or green space, has an independent effect on health and health-related behaviours. Access to green space can affect health by inducing beneficial physical activity and by ameliorating stress levels.	Unknown

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
		Reducing or disrupting access to green space may therefore have negative health consequences. Public footpaths within the application boundary are planned to remain operational during the construction of the proposed development. Any loss of open space during construction would be minimised and reinstated following construction activities.	
▪ In areas of deficiency, does the proposal provide new open or natural space, or improve access to existing spaces?	N/A	Scoped out of assessment – no areas of deficiency identified	N/A
▪ Does the proposal provide a range of play spaces for children and young people?	Early occupation Full build-out	Inclusion of a range of new play spaces across the Garden Town.	Positive
▪ Does the proposal provide links between open and natural spaces and the public realm?	Early occupation Full build-out	Linkages provided between open and natural spaces and the public realm as part of design principles. Spaces for sports, education and play will be focussed in central areas, to encourage community use, with facilities also distributed throughout the scheme within appropriate walking distances.	Positive
▪ Are the open and natural spaces welcoming and safe and accessible for all?	Early occupation Full build-out	Sustainable Travel Strategy to provide accessible neighbourhoods. Framework Masterplan Report identifies pleasant walking and cycling routes via green corridors that link together the various assets (parks, play areas, allotments, sports) with communities and local centres.	Positive
▪ Does the proposal set out how new open space will be managed and maintained?	Early occupation Full build-out	Maintenance of areas of new open space will be confirmed in supporting documents.	Positive

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
Air Quality, Noise, Neighbourhood Amenity			
▪ Does the proposal minimise construction impacts such as dust, noise, vibration and odours?	Construction Early occupation	The Environmental Statement will identify specific construction mitigation required as part of individual topics (e.g. air quality, noise). A Construction Environment Masterplan (CEMP) will be implemented to minimise construction impacts.	Negative
▪ Does the proposal minimise air pollution caused by traffic and energy facilities?	Construction Early occupation Full build-out	As above Factors relating to masterplan design and layout – the siting of sensitive receptors in relation to, for example main traffic routes.	Negative
▪ Does the proposal minimise noise pollution caused by traffic and commercial uses?	Construction Early occupation Full build-out	As above	Negative
Accessibility and Active Travel			
▪ Does the proposal prioritise and encourage walking (such as through shared spaces?)	Early occupation Full build-out	The proposed development incorporates new footpaths, including links with the existing network of Public Rights of Way. To ensure cycling and walking routes are well used and fit for purpose they will be split into two categories: Direct routes and Leisure routes. A series of walking and cycling routes away from vehicular traffic will also be created, establishing a safe network linking the central areas on the east sides of the development into and through the residential areas. These routes will link into the existing footpaths and pavements within the site.	Positive
▪ Does the proposal prioritise and encourage cycling (for example by providing secure cycle parking, showers and cycle lanes)?	Early occupation Full build-out		
▪ Does the proposal connect public realm and internal routes to local and strategic cycle and walking networks?	Early occupation Full build-out		
▪ Does the proposal include traffic management and	Early occupation	Capacity enhancements will be proposed to alleviate	Positive

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
calming measures to help reduce and minimise road injuries?	Full build-out	existing problems of traffic management and mitigate the possibility of further congestion where necessary.	
▪ Is the proposal well connected to public transport, local services and facilities?	Early occupation Full build-out	Public Transport Strategy, including bus network links, parking at Westenhanger Station. Bus routes being developed in conjunction with local stakeholders.	Positive
▪ Does the proposal seek to reduce car use by reducing car parking provision, supported by the controlled parking zones, car clubs and travel plans measures?	Early occupation Full build-out	Sustainable Travel Strategy setting out proposals to reduce car use.	Positive
▪ Does the proposal allow people with mobility problems or a disability to access buildings and places?	Early occupation Full build-out	Healthy homes include age friendly design. Infrastructure design to take account of the accessibility needs of the mobility impaired.	Positive
Crime Reduction and Community Safety			
▪ Does the proposal incorporate elements to help design out crime?		During construction, security measures will be identified in the CEMP.	
▪ Does the proposal incorporate design techniques to help people feel secure and avoid creating 'gated communities'?		Fear of crime and perception of safety can be an important factor influencing people's daily lives – for example their travel choices. Women typically experience greater levels of concern over personal safety than do men and are more likely to avoid segregated spaces for example. Personal safety may also affect decisions to walk or cycle. This has implications for public health directly (fear of crime) and indirectly (decrease in active lifestyle).	
▪ Does the proposal include attractive, multi-use public spaces and buildings?	Construction Early occupation Full build-out		Positive
▪ Has engagement and consultation been carried out with the local community?		Security is built into the healthy homes design principles. Engagement and consultation has been undertaken with the local community.	

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
Access to Healthy Food			
▪ Does the proposal facilitate the supply of local food, i.e. allotments, community farms and farmers' markets?	Early occupation Full build-out	To encourage healthy eating, edible landscapes and community allotments and orchards are included for growing local food. Approximately 4-6 ha of allotments and community orchards to be provided.	Positive
▪ Is there a range of retail uses, including food stores and smaller affordable shops for social enterprises?	Early occupation Full build-out	Retail Strategy to provide guiding principles to support a range of retail uses.	Positive
▪ Does the proposal avoid contributing towards an over-concentration of hot food takeaways in the local area?	Early occupation Full build-out	Retail Strategy to provide guiding principles that avoid over-concentration of inappropriate activities.	Unknown
Access to Work and Training			
▪ Does the proposal provide access to local employment and training opportunities, including temporary construction and permanent 'end-use' jobs?	Construction Early occupation Full build-out	People in employment are generally healthier than those who are unemployed. Employment is associated with feelings of security, increased friendship networks and social status, each of which can be linked to better health. Income from employment also has an indirect financial effect on the quality of life of families; and therefore their health and the health of their dependants Employment uses comprising circa 15 hectares of B1 and B2 uses in a commercial/light industrial business park with circa 10 hectares of new business park and up to 5 hectares light industrial park together with a hotel. Together with local centres and home working this could create approximately 8,000 new jobs.	Positive
▪ Does the proposal provide childcare facilities?	Early occupation	Employment uses comprising circa 15 hectares of B1	Positive

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
▪ Does the proposal include managed and affordable workspace for local businesses?	Full build-out	and B2 uses in a commercial/light industrial business park with circa 10 hectares of new business park and up to 5 hectares light industrial park together with a hotel. Together with local centres and home working this could create approximately 8,000 new jobs.	
▪ Does the proposal include opportunities for work for local people via local procurement arrangements?		Potential for e.g. childcare facilities would be determined during detailed design stage. Provision within primary schools.	
Social Cohesion and Lifetime Neighbourhoods			
▪ Does the proposal connect with existing communities, i.e. layout and movement which avoids physical barriers and severance and land uses and spaces which encourage social interaction?	Early occupation Full build-out	Communities and their networks can create strong social capital, which can have a positive contribution to a range of factors that support well-being, including personal well-being and health. Links between social capital / cohesion and health and well-being include opportunities for social participation and support (which can result in a reduced risk of cardiovascular disease, anxiety and depression). Research has shown that improved social cohesion can lead to improvements in mental well-being and health. The proposed development includes for the creation of new neighbourhoods, linked together through new accesses and infrastructure, and including the creation of community facilities.	
▪ Does the proposal include a mix of uses and a range of community facilities?	Early occupation Full build-out	A mix of uses and a range of community facilities are incorporated into the proposed Development.	Positive
▪ Does the proposal provide opportunities for the voluntary and community sectors?	Early occupation Full build-out	Opportunities are likely to come forward as build-out progresses.	Positive

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
▪ Does the proposal address the six key components of Lifetime Neighbourhoods?	Early occupation Full build-out	Design standards as set out in the Planning Statement / Design and Access Statement	Positive
Minimising the Use of Resources			
▪ Does the proposal make best use of existing land?	Construction Early occupation Full build-out	The existing rural farmland within the Otterpool Park masterplan is private and not widely accessible to the general public. The proposed Development provides an opportunity to showcase sustainable development.	Positive
▪ Does the proposal encourage recycling (including building materials)?	Construction Early occupation Full build-out	Sustainability is a guiding principle of the proposed Development. The Sustainability Strategy sets out how sustainable design will be incorporated into the project, for example through renewable energy being integrated into people's homes and businesses.	Positive
▪ Does the proposal incorporate sustainable design and construction techniques?	Construction Early occupation Full build-out		
Climate Change			
▪ Does the proposal incorporate renewable energy?		Sustainability is a guiding principle of the proposed Development. The Sustainability Strategy sets out how sustainable design will be incorporated into the project, for example through renewable energy being integrated into people's homes and businesses. Healthy homes design ensures that homes are energy efficient and include low emission heating, cooling and ventilation.	Positive
▪ Does the proposal ensure that buildings and public spaces are designed to respond to winter and summer temperatures, i.e. ventilation, shading and landscaping?	Construction Early occupation Full build-out		
▪ Does the proposal maintain or enhance biodiversity?	Construction	The Otterpool Park Masterplan takes into account the biodiversity of the site, striving to protect and enhance	Positive

Assessment Criteria	Stage at which Relevant (Construction / Early Occupation / Full Build Out)	Details / evidence	Potential Health Impact
	Early occupation Full build-out	the ecological value of the area.	
▪ Does the proposal incorporate sustainable urban drainage techniques?	Construction Early occupation Full build-out	Water Strategy for Otterpool Park will provide sustainable urban drainage techniques (SuDS). When designed well, SuDS can increase property value, mitigate local flood risk, moderate microclimates, benefit ecology, provide new sources of water and create valuable amenity spaces for communities to enjoy.	Positive

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